Attachment PTA-XVIII
Adjacent Property Owner Notification
Page 1

ATTACHMENT PTA-XVIII - ADJACENT PROPERTY OWNER NOTIFICATION

As required by §9 VAC 20-81-460.I., a written notice has been sent to all adjacent property owners or occupants. A signed statement, a typical copy of the notice, and the names and addresses of those to whom the notice were sent are included. In addition, Cumberland County notified adjacent property owners during the conditional use and rezoning process. This information is also included for reference.

ATTACHMENT PTA – XVIII VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY ADJACENT PROPERTY OWNER NOTIFICATION

GREEN RIDGE RECYCLING AND DISPOSAL FACILITY, LLC Adjacent Property Owner Certification Statement

Pursuant to §9 VAC 20-81-460.I. of the Virginia Solid Waste Management Regulations (VSWMR, 9 VAC 20-81-10 et seq.) this document constitutes a statement by <u>Green Ridge Recycling and Disposal Facility, LLC</u> that written notice has been sent to all owners or occupants of the property adjacent to the proposed Green Ridge Recycling and Disposal Facility to be located in Cumberland County. The applicant relied on the notifications sent by Cumberland County during the rezoning and conditional use permit activities which required that the adjacent property owners be notified. A list of names and addresses of the adjacent property owners or occupants along with a sample copy of the notification letter has been included with this statement.

Date 1-14-2020

Green Ridge Recycling and Disposal Facility, LLC

Title: President & Manager

Signed:

Mailing Address: 12230 Deer Grove Road, Midlothian, VA 23112

Cell Phone: 802-379-1575

Email address: jerry.cifor@myfairpoint.net

31-A-1	676 AMERICAN TIMBERLAND LLC	1180 PEACHTREE ST, NE	SUITE 1810	ATLANTA, GA	30309	2135.294	0 VACANT			
37-A-63	13140 MARTIN, BLAKE AUBRE & DEIDRE D.	448 PINEGROVE RD		CARTERSVILLE, VA	23027	77.454	2011 DWELLING	CONV	CARTERSVILLE	PINEGROVE RD
37-A-68	1264 JEFFERSON, LEONA, ET ALS	C/O VALERIE MURPHY	112 FAIRWAYS CRESCENT	CARMEL, NY	10512	43.19	0 VACANT			
37-A-70	9539 AGEE, SUNNY MARTIN & MARTIN, EDWARD	3679 ELLISVILLE DR		LOUISA, VA	23093	293.254	1868 DWELLING	CONV	CARTERSVILLE	PINEGROVE RD
38-A-2	6400 PARKER, CHARLES LESTER, ET ALS	11 RITA DR		MOUNT SINAI, NY	11766	186.8	0 VACANT			
38-A-6	3578 TERRY, JAMES	300 MILLER LN		CUMBERLAND, VA	23040	19.28	1990 DWELLING	CONV	CUMBERLAND	MILLER LN
38-A-6-B	16980 GREEN, RICHARD C., JR. & PEMBERTON,	246 MILLER LN		CUMBERLAND, VA	23040	37.6	2001 DWELLING	CONV	CUMBERLAND	MILLER LN
38-A-6-D	17245 CEMETERY GILLIAM				0	1	0 CEMETERY			
44-A-12	6329 MARABLE, GEORGE	C/O ADRIENNE D. GRIST	531 MAIN ST #411	NEW YORK CITY, NY	10044	25	0 VACANT			
44-A-15	13829 OULIE, KEITH M.	PO BOX 51		CUMBERLAND, VA	23040	74.65	0 VACANT			
44-A-18	14180 SCOTT, HOWARD ESTATE	C/O ERLENE SCOTT BARRETT	1124 PARLIAMENT LAKE DR	COLUMBIA, SC	29223	102.88	1880 DWELLING	CONV	CUMBERLAND	PINEGROVE RD
44-A-39	16301 BISE, JACKSON D.,JR. & JONATHAN D.	1828 BOYER RD		POWHATAN, VA	23139	128	0 VACANT			
44-A-52	18995 BISE, JACKSON D.,JR. & JONATHAN D.	1828 BOYER RD		POWHATAN, VA	23139	45	0 VACANT			
45-1-16	5089 MANAGE THIS, LLC	5825 CARTERSVILLE RD		POWHATAN, VA	23139	2	2002 DWELLING	DUPLEX	POWHATAN	LILY DR
45-1-16-A	18153 MANAGE THIS, LLC	5825 CARTERSVILLE RD		POWHATAN, VA	23139	3.05	2002 DWELLING	DUPLEX	POWHATAN	LILY DR
45-1-30-A	18554 GREEN, LARRY S. & SHARON R.	2365 MOSBY RD		POWHATAN, VA	23139	0.07	0 VACANT			
45-1-32	18159 GATES, JOSEPHINE E.	12600 OLD BUCKINGHAM RD		MIDLOTHIAN, VA	23113	2.36	0 VACANT			
45-1-36-A	15372 CROWDER, ROY H.	2379 MOSBY LN		POWHATAN, VA	23139	2.002	2010 DWELLING	CONV	POWHATAN	MOSBY RD
45-1-37	12578 BELCH, ROBERT G.	2377 MOSBY LN		POWHATAN, VA	23139	4.46	1982 DWELLING	DOUBLEWIDE	POWHATAN	MOSBY RD
45-1-38	11374 GREEN, LARRY S. & SHARON R.	2365 MOSBY RD		POWHATAN, VA	23139	4.48	0 IMPROVED			
45-2-1-A	1282 CLARK, DAVID T. & ELIZABETH K.	62 MILLER LN		CUMBERLAND, VA	23040	2	1997 DWELLING	SINGLEWIDE	CUMBERLAND	MILLER LN
45-2-1-A1	18178 CLARK, DAVID T. & ELIZABETH K.	62 MILLER LN		CUMBBERLAND, VA	23040	2.468	1996 DWELLING	SINGLEWIDE	CUMBERLAND	MILLER LN
45-2-1-A2	18589 CLARK, DAVID T. & ELIZABETH	62 MILLER LN		CUMBERLAND, VA	23040	0.48	0 VACANT			
45-2-3-B	6646 CLARK, DAVID T., JR.	PO BOX 744		POWHATAN, VA	23139	17.296	0 VACANT			
45-2-3-C	17145 BOOKER, ELOUISE M, ET ALS	2503 VINEYARD LN		CROFTON, MD	21114	5	1996 DWELLING	DOUBLEWIDE	CUMBERLAND	80 MILLER LN/82 MILLER LN
45-2-3-E	17635 CLARK, DAVID T.	62 MILLER LN		CUMBERLAND, VA	23040	16.098	0 VACANT			
45-2-3-E1	18350 CLARK, DAVID T., JR.	62 MILLER LN		CUMBERLAND, VA	23040	2.866	2004 DWELLING	CONV	CUMBERLAND	MILLER LN
45-A-2-A	5736 GILLS, STEVE A.	192 MILLER LN		CUMBERLAND, VA	23040	1	1988 DWELLING	MODULAR	CUMBERLAND	MILLER LN
45-A-2-G	18322 GILES, MICHAEL L., II	202 MILLER LN		CUMBERLAND, VA	23040	2	2007 DWELLING	CONV	CUMBERLAND	MILLER LN
45-A-2-G3	18671 CASHION, BRUCE	21701 SAPPONY RD		MOSELEY, VA	23120	2	2007 DWELLING	CONV	CUMBERLAND	MILLER LN
45-A-4-A	18070 GUNNARSSON, RAGNAR	57 ADLER LN		CUMBERLAND, VA	23040	76.18	0 VACANT			
45-A-6	8919 JAMES, CORA	5 ALDER LN		CUMBERLAND, VA	23040	0.5	1958 DWELLING	SINGLEWIDE	CUMBERLAND	ALDER LN
45-A-8-A	9236 SCALES, JEFFREY C.	1359 CARTERSVILLE RD		CARTERSVILLE, VA	23027	10.001	2003 DWELLING	SINGLEWIDE	CUMBERLAND	128 MILLER LN/130 MILLER LN
45-A-8-A1	18187 HOBSON, JESSE	PO BOX 352		CUMBERLAND, VA	23040	4.416	2003 DWELLING	MODULAR	CUMBERLAND	14 ALDER LN
45-A-8-B	17814 HARVELL, JAMES CHRISTIAN	RR5 BOX 1882		COALGATE, OK	74538	0.476	0 VACANT			
45-A-9	887 CLARK, DAVID THOMAS, TRUSTEE	62 MILLER LN		CUMBERLAND, VA	23040	15	0 VACANT			

Jerry Cifor Green Ridge Recycling and Disposal Facility, LLC 12230 Deerhill Road Midlothian, VA 23112 December 13, 2019

American Timberland LLC 1180 Peachtree Street, NE Suite 1810 Atlanta, GA 30309

RE: Application for Solid Waste Management Permit

Green Ridge Recycling and Disposal Facility with the Virginia Department of Environmental Quality

Tax Map Nos. 45-1-41, 45-1-40, 45-2-2-B, 45-2-2-A, 44-A-21, 44-A-22, 44-A-36, 44-A-13, 44-A-14, 44-A-19A, 45-A-7, 44-A-19, 44-A-20, 45-A-1, 38-A-7, and 37-A-69

Dear Sir/Madame:

Pursuant to § 9 VAC 20-81-460.I of the Virginia Solid Waste Management Regulations (VSWMR or Regulations), this letter serves as written notice to all owners or occupants of adjacent properties that Green Ridge Recycling and Disposal Facility, LLC ("Green Ridge") intends to construct and operate a solid waste management facility, involving a municipal (sanitary) landfill and related uses, on property located in Cumberland County on the north side of Route 60 near the Powhatan County line and described as Tax Map Nos. 45-1-41, 45-1-40, 45-2-2-B, 45-2-2-A, 44-A-21, 44-A-22, 44-A-36, 44-A-13, 44-A-14, 44-A-19A, 45-A-7, 44-A-19, 44-A-20, 45-A-1, 38-A-7, and 37-A-69 ("Property"). The Property has a total area of approximately 1,117.63 acres.

On June 28, 2018, after notice to adjacent property owners and public advertisements, Green Ridge received zoning and a Conditional Use Permit (CUP) from the Cumberland County Board of Supervisors for the construction and operation of a sanitary waste management facility and related uses on the Property.

This letter serves as notice and is to inform you that Green Ridge will be submitting a Part A Application to the Virginia Department of Environmental Quality to site a new landfill on the aforesaid Property. You are being notified because according to Cumberland County records, your property is adjacent to the proposed landfill Property.

If you have any comments or questions regarding this matter, please feel free to contact me at (802) 379-1575 or jerry.cifor@myfairpoint.net.

Jerry Cifor, President

Jany A. Chan

GREEN RIDGE RECYCLING

AND DISPOSAL FACILITY, LLC

{2669289-1, 120356-00002-05}

Cumberland County Planning Commission Adjacent Property Owner Notification Rezoning Application Notification mailed June 1, 2018 Public Hearing date June 14, 2018

Public Hearing date June 14, 2016					
Owner Name	Owner Street Address	Owner City/State Address			
American Timberland	1180 Peachtree St., NE	Atlanta, GA 30309			
American minbenand	1180 Feachtree St., NL	Atlanta, GA 30309			
Edward Ray Martin	530 Pinegrove Rd	Cartersville, VA 23027			
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Blake Aubre & Diedre D. Martin	448 Pinegrove Rd	Cartersville, VA 23027			
William & Cordel Wade	11 Portage Rd	West Hartford, CT 06117			
Leona Jefferson et. al. c/o Wade		1			
Cordell	11 Portage Rd	West Hartford, CT 06117			
Sunny Martin Agee, Roberts Samual,	11 Chage na	West Hartista, et doll?			
Jr. & Edward Ray Martin	3679 Ellisville Dr	Louisa, VA 23093			
Eliz P & Mrs Bernard C N Cocke c/o	1235 North Loop West, Ste				
Harding & Carbone	205	Houston, TX 77008			
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Charles Lester Parker et al	11 Rita Dr	Mount Sinai, NY 11766			
Susie Lightfoot c/o Florine Doughty	10054 E Albert Ct	Chesterfield, VA 23832			
James Terry	300 Miller Ln	Cumberland, VA 23040			
James Terry		camberiana, v/(23010			
Linda L Green Trustee	264 Miller Ln	Cumberland, VA 23040			
Richard C Green, Jr & Niko Pemberton	246 Miller Ln	Cumberland, VA 23040			
M. Carley d. O. C. a. Ellan, Dailann	2260 Anderson Herri	Ch . d d			
W Garland & Sue Ellen Bailery	2268 Anderson Hwy	Cumberland, VA 23040			
David A Toth	32 Brown Rd	Cumberland, VA 23040			
Curtis W Daugherty	21438 Courtland Oaks St	Katy, TX 77494			
CMH Homes, Inc	5000 Clayton Rd	Maryville, TN 37804			
Joseph H, Jr & Janie Marie Franklin	274 Brown Rd	Cumberland, VA 23040			
Keith M Oulie	PO Box 51	Cumberland, VA 23040			
Neith M Oulle	LO DOY 2T	Cumberianu, VA 23040			
George Marable c/o Adrienne D Grist	531 Main St #411	New York City, NY 10044			

Adjacent Property Owner Notification Rezoning Application Notification mailed June 1, 2018 Public Hearing date June 14, 2018

Public Hearing date June 14, 2018				
Owner Name	Owner Street Address	Owner City/State Address		
Roosevelt Gregory	64 Frenchs Store Rd	Cumberland, VA 23040		
Pine Grove Comm Ctr Trustee c/o Rev				
Muriel Miller Branch	3677 Forest Haven Dr	Richmond, VA 23234		
Howard Scott Estate c/o Erlene Scott				
Barrett	1124 Parliament Lake Dr	Columbia, SC 29223		
Jerry West	1117 Old Buckingham Rd	Powhatan, VA 23139		
Hubbard A & Barbara A Sprouse	60 Miller Ln	Cumberland, VA 23040		
Steven M & Vincent K Matthews	2717 Main Sail Ct	Henrico, VA 23233		
Janice Nash Goode	327 Dry Bridge Rd	Farmville, VA 23901		
Morris L Nash, For Life	327 Dry Bridge Rd	Farmville, VA 23901		
Shon C Goode	14125 Bermuda Point Ct	Chester, VA 23831		
Toni N Jenkins	30 Liberty Ln	Cumberland, VA 23040		
Christopher W Loftis	97 Pinegrove Rd	Cumberland, VA 23040		
Roberta H Miller	103 Pinegrove Rd	Cumberland, VA 23040		
D Sherwoord Haddon, Jr	1995 Judes Ferry Rd	Powhatan, VA 23139		
David Roy & Leslie Marie Diming	101 Pinegrove Rd	Cumberland, VA 23040		
Jackson D, Jr & Jonathan D Bise	2620 Anderson Hwy	Powhatan, VA 23139		
B&Q Properties LLC	2701 Pineridge Ln	Powhatan, VA 23139		
Manage This, LLC	5825 Cartersville Rd	Powhatan, VA 23139		
Larry S & Sharon R Green	2365 Mosby Rd	Powhatan, VA 23139		
Josephine E Gates	12600 Old Buckingham Rd	Midlothian, VA 23113		
Garland, Jr & Vickie Lee Isom	2375 Mosby Rd	Powhatan, VA 23139		

Adjacent Property Owner Notification Rezoning Application Notification mailed June 1, 2018

Public Hearing date June 14, 2018

Public Hearing date June 14, 2018				
Owner Name	Owner Street Address	Owner City/State Address		
Jerry H Morton & Guy J Haalboom	2369 Mosby Rd	Powhatan, VA 23139		
Roy H Crowder	2379 Mosby Rd	Powhatan, VA 23139		
Robert G Belch	2377 Mosby Rd	Powhatan, VA 23139		
Ellis M Palmore Lumber, Inc	2575 Ballsville Rd	Powhatan, VA 23139		
David T & Elizabeth Clark	62 Miller Ln	Cumberland, VA 23040		
David T Clark, Jr	PO Box 74	Powhatan, VA 23139		
Elouise M Booker et all	2503 Vineyard Ln	Crofton, MD 21114		
David T Clark	62 Miller Ln	Cumberland, VA 23040		
Sivandand Subramanian & Chadalavada Nagajyothi Pillai	11416 Abbotts Cross Ln	Glen Allen, VA 23059		
Valco Investments, LLC	913 Scotch Pine Ct	Sandston, VA 23150		
Randolph George Scott, Sr	PO Box 351	Cumberland, VA 23040		
Jacob E Milburn	6678 Blenheim Rd	Powhatan, VA 23139		
Elmer J & Faye N Heis	PO Box 271	Powhatan, VA 23139		
Ken Broadwater Homes, LLC	99 Rhodes Ln	Cartersville, VA 23027		
Clifton C & Kimberley White	1 Anderson Hwy	Powhatan, VA 23139		
George M, III & Rebecca A L Hatch	15 Anderson Hwy	Powhatan, VA 23139		
Mark J Poole	29 Anderson Hwy	Powhatan, VA 23139		
William D & Wayne T McCraw	31 Anderson Hwy	Powhatan, VA 23139		
Alethia Renee Gregory Hobson	206 Miller Ln	Cumberland, VA 23040		
Steve A Gills	192 Miller Ln	Cumberland, VA 23040		

Adjacent Property Owner Notification Rezoning Application Notification mailed June 1, 2018 Public Hearing date June 14, 2018

Owner Name Owner Street Address Owner City/State Address					
Owner wame	Owner Street Address	Owner City/State Address			
John L Wade	PO Box 282	Cumberland, VA 23040			
Bruce T Allen	224 Miller Ln	Cumberland, VA 23040			
William Matthew Hatcher	200 Miller Ln	Cumberland, VA 23040			
Michael L Giles, II	202 Miller Ln	Cumberland, VA 23040			
Phillip R Gentile, III	204 Miller Ln	Cumberland, VA 23040			
Bruce Cashion	21701 Sappony Rd	Mosely, VA 23120			
Lloyd R & Gertrude O Crenshaw	208 Miller Ln	Cumberland, VA 23040			
Sandra Cline	16 Alder Ln	Cumberland, VA 23040			
Ragnar Gunnarsson	57 Alder Ln	Cumberland, VA 23040			
Cora James	5 Alder Ln	Cumberland, VA 23040			
Jeffrey C Scales	1359 Cartersville Rd	Cartersville, VA 23027			
Jesse Hobson	PO Box 352	Cumberland, VA 23040			
James Christian Harvell	RR % Box 1882	Coalgate, OK 74538			
David Thomas Clark Trustee	62 Miller Ln	Cumberland, VA 23040			
Theodore L Voorhees	3834 Old Buckingham Rd, Ste A	Powhatan, VA 23139			

Cumberland County Planning Commission Adjacent Property Owner Notification Conditional Use Permit Application Notification mailed June 1, 2018 Public Hearing - June 14, 2018

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Owner Name	Owner Street Address	Owner City/State Address			
American Timberland	1180 Peachtree St., NE	Atlanta, GA 30309			
Edward Ray Martin	530 Pinegrove Rd	Cartersville, VA 23027			
Blake Aubre & Diedre D. Martin	448 Pinegrove Rd	Cartersville, VA 23027			
William & Cordel Wade	11 Portage Rd	West Hartford, CT 06117			
Leona Jefferson et. al. c/o Wade Cordell	11 Portage Rd	West Hartford, CT 06117			
Sunny Martin Agee, Roberts Samual, Jr. & Edward Ray Martin	3679 Ellisville Dr	Louisa, VA 23093			
Eliz P & Mrs Bernard C N Cocke c/o Harding & Carbone	1235 North Loop West, Ste 205	Houston, TX 77008			
Charles Lester Parker et al	11 Rita Dr	Mount Sinai, NY 11766			
Susie Lightfoot c/o Florine Doughty	10054 E Albert Ct	Chesterfield, VA 23832			
James Terry	300 Miller Ln	Cumberland, VA 23040			
Linda L Green Trustee	264 Miller Ln	Cumberland, VA 23040			
Richard C Green, Jr & Niko Pemberton	246 Miller Ln	Cumberland, VA 23040			
W Garland & Sue Ellen Bailery	2268 Anderson Hwy	Cumberland, VA 23040			
David A Toth	32 Brown Rd	Cumberland, VA 23040			
Curtis W Daugherty	21438 Courtland Oaks St	Katy, TX 77494			
CMH Homes, Inc	5000 Clayton Rd	Maryville, TN 37804			
Joseph H, Jr & Janie Marie Franklin	274 Brown Rd	Cumberland, VA 23040			
Keith M Oulie	PO Box 51	Cumberland, VA 23040			

Adjacent Property Owner Notification Conditional Use Permit Application Notification mailed June 1, 2018 Public Hearing - June 14, 2018

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George Marable c/o Adrienne D Grist	531 Main St #411	New York City, NY 10044			
Roosevelt Gregory	64 Frenchs Store Rd	Cumberland, VA 23040			
Pine Grove Comm Ctr Trustee c/o Rev Muriel Miller Branch	3677 Forest Haven Dr	Richmond, VA 23234			
Howard Scott Estate c/o Erlene Scott Barrett	1124 Parliament Lake Dr	Columbia, SC 29223			
Jerry West	1117 Old Buckingham Rd	Powhatan, VA 23139			
Hubbard A & Barbara A Sprouse	60 Miller Ln	Cumberland, VA 23040			
Steven M & Vincent K Matthews	2717 Main Sail Ct	Henrico, VA 23233			
Janice Nash Goode	327 Dry Bridge Rd	Farmville, VA 23901			
Morris L Nash, For Life	327 Dry Bridge Rd	Farmville, VA 23901			
Shon C Goode	14125 Bermuda Point Ct	Chester, VA 23831			
Toni N Jenkins	30 Liberty Ln	Cumberland, VA 23040			
Christopher W Loftis	97 Pinegrove Rd	Cumberland, VA 23040			
Roberta H Miller	103 Pinegrove Rd	Cumberland, VA 23040			
D Sherwoord Haddon, Jr	1995 Judes Ferry Rd	Powhatan, VA 23139			
David Roy & Leslie Marie Diming	101 Pinegrove Rd	Cumberland, VA 23040			
Jackson D, Jr & Jonathan D Bise	2620 Anderson Hwy	Powhatan, VA 23139			
B&Q Properties LLC	2701 Pineridge Ln	Powhatan, VA 23139			
Manage This, LLC	5825 Cartersville Rd	Powhatan, VA 23139			
Larry S & Sharon R Green	2365 Mosby Rd	Powhatan, VA 23139			

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Josephine E Gates	12600 Old Buckingham Rd	Midlothian, VA 23113				
Garland, Jr & Vickie Lee Isom	2375 Mosby Rd	Powhatan, VA 23139				
Jerry H Morton & Guy J Haalboom	2369 Mosby Rd	Powhatan, VA 23139				
Roy H Crowder	2379 Mosby Rd	Powhatan, VA 23139				
Robert G Belch	2377 Mosby Rd	Powhatan, VA 23139				
Ellis M Palmore Lumber, Inc	2575 Ballsville Rd	Powhatan, VA 23139				
David T & Elizabeth Clark	62 Miller Ln	Cumberland, VA 23040				
David T Clark, Jr	PO Box 74	Powhatan, VA 23139				
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George M, III & Rebecca A L Hatch	15 Anderson Hwy	Powhatan, VA 23139				
Mark J Poole	29 Anderson Hwy	Powhatan, VA 23139				

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William D & Wayne T McCraw	31 Anderson Hwy	Powhatan, VA 23139	
Alethia Renee Gregory Hobson	206 Miller Ln	Cumberland, VA 23040	
Steve A Gills	192 Miller Ln	Cumberland, VA 23040	
John L Wade	PO Box 282	Cumberland, VA 23040	
Bruce T Allen	224 Miller Ln	Cumberland, VA 23040	
William Matthew Hatcher	200 Miller Ln	Cumberland, VA 23040	
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Ragnar Gunnarsson	57 Alder Ln	Cumberland, VA 23040	
Cora James	5 Alder Ln	Cumberland, VA 23040	
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Theodore L Voorhees	3834 Old Buckingham Rd, S	Ste Powhatan, VA 23139	

Cumberland County Board of Supervisors Adjacent Property Owner Notification Conditional User Permit Application Notification mailed June 12, 2018 Public Hearing June 28, 2018

Owner Name Owner Street Address Owner City/State Address				
Owner Ivallie	Owner Street Address	Owner City/State Address		
American Timberland	1180 Peachtree St., NE	Atlanta, GA 30309		
Edward Ray Martin	530 Pinegrove Rd	Cartersville, VA 23027		
Blake Aubre & Diedre D. Martin	448 Pinegrove Rd	Cartersville, VA 23027		
William & Cordel Wade	11 Portage Rd	West Hartford, CT 06117		
Leona Jefferson et. al. c/o Wade Cordell	11 Portage Rd	West Hartford, CT 06117		
Sunny Martin Agee, Roberts Samual, Jr. & Edward Ray Martin	3679 Ellisville Dr	Louisa, VA 23093		
Eliz P & Mrs Bernard C N Cocke c/o	1235 North Loop West, Ste			
Harding & Carbone	205	Houston, TX 77008		
Charles Lester Parker et al	11 Rita Dr	Mount Sinai, NY 11766		
Susie Lightfoot c/o Florine Doughty	10054 E Albert Ct	Chesterfield, VA 23832		
James Terry	300 Miller Ln	Cumberland, VA 23040		
Linda L Green Trustee	264 Miller Ln	Cumberland, VA 23040		
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Pine Grove Comm Ctr Trustee c/o Rev					
Muriel Miller Branch	3677 Forest Haven Dr	Richmond, VA 23234			
Howard Scott Estate c/o Erlene Scott					
Barrett	1124 Parliament Lake Dr	Columbia, SC 29223			
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Steven M & Vincent K Matthews	2717 Main Sail Ct	Henrico, VA 23233			
Janice Nash Goode	327 Dry Bridge Rd	Farmville, VA 23901			
Morris L Nash, For Life	327 Dry Bridge Rd	Farmville, VA 23901			
Shon C Goode	14125 Bermuda Point Ct	Chester, VA 23831			
Toni N Jenkins	30 Liberty Ln	Cumberland, VA 23040			
Christopher W Loftis	97 Pinegrove Rd	Cumberland, VA 23040			
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D Sherwoord Haddon, Jr	1995 Judes Ferry Rd	Powhatan, VA 23139			
David Roy & Leslie Marie Diming	101 Pinegrove Rd	Cumberland, VA 23040			
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B&Q Properties LLC	2701 Pineridge Ln	Powhatan, VA 23139			
Manage This, LLC	5825 Cartersville Rd	Powhatan, VA 23139			
Larry S & Sharon R Green	2365 Mosby Rd	Powhatan, VA 23139			

Adjacent Property Owner Notification Conditional User Permit Application Notification mailed June 12, 2018 Public Hearing June 28, 2018

Owner Name Owner Street Address Owner City/State Address					
Owner Maine	Owner Street Address	Owner City/State Address			
Josephine E Gates	12600 Old Buckingham Rd	Midlothian, VA 23113			
Garland, Jr & Vickie Lee Isom	2375 Mosby Rd	Powhatan, VA 23139			
Jerry H Morton & Guy J Haalboom	2369 Mosby Rd	Powhatan, VA 23139			
Roy H Crowder	2379 Mosby Rd	Powhatan, VA 23139			
Robert G Belch	2377 Mosby Rd	Powhatan, VA 23139			
Ellis M Palmore Lumber, Inc	2575 Ballsville Rd	Powhatan, VA 23139			
David T & Elizabeth Clark	62 Miller Ln	Cumberland, VA 23040			
David T Clark, Jr	PO Box 74	Powhatan, VA 23139			
Elouise M Booker et all	2503 Vineyard Ln	Crofton, MD 21114			
David T Clark	62 Miller Ln	Cumberland, VA 23040			
Sivandand Subramanian & Chadalavada Nagajyothi Pillai	11416 Abbotts Cross Ln	Glen Allen, VA 23059			
Valco Investments, LLC	913 Scotch Pine Ct	Sandston, VA 23150			
Randolph George Scott, Sr	PO Box 351	Cumberland, VA 23040			
Jacob E Milburn	6678 Blenheim Rd	Powhatan, VA 23139			
Elmer J & Faye N Heis	PO Box 271	Powhatan, VA 23139			
Ken Broadwater Homes, LLC	99 Rhodes Ln	Cartersville, VA 23027			
Clifton C & Kimberley White	1 Anderson Hwy	Powhatan, VA 23139			
George M, III & Rebecca A L Hatch	15 Anderson Hwy	Powhatan, VA 23139			
Mark J Poole	29 Anderson Hwy	Powhatan, VA 23139			

Adjacent Property Owner Notification Conditional User Permit Application Notification mailed June 12, 2018 Public Hearing June 28, 2018

Public Hearing June 28, 2018		
Owner Name	Owner Street Address	Owner City/State Address
William D & Wayne T McCraw	31 Anderson Hwy	Powhatan, VA 23139
Alethia Renee Gregory Hobson	206 Miller Ln	Cumberland, VA 23040
Steve A Gills	192 Miller Ln	Cumberland, VA 23040
John L Wade	PO Box 282	Cumberland, VA 23040
Bruce T Allen	224 Miller Ln	Cumberland, VA 23040
William Matthew Hatcher	200 Miller Ln	Cumberland, VA 23040
Michael L Giles, II	202 Miller Ln	Cumberland, VA 23040
Phillip R Gentile, III	204 Miller Ln	Cumberland, VA 23040
Bruce Cashion	21701 Sappony Rd	Mosely, VA 23120
Lloyd R & Gertrude O Crenshaw	208 Miller Ln	Cumberland, VA 23040
Sandra Cline	16 Alder Ln	Cumberland, VA 23040
Ragnar Gunnarsson	57 Alder Ln	Cumberland, VA 23040
Cora James	5 Alder Ln	Cumberland, VA 23040
Jeffrey C Scales	1359 Cartersville Rd	Cartersville, VA 23027
Jesse Hobson	PO Box 352	Cumberland, VA 23040
James Christian Harvell	RR % Box 1882	Coalgate, OK 74538
David Thomas Clark Trustee	62 Miller Ln	Cumberland, VA 23040
Theodore L Voorhees	3834 Old Buckingham Rd, S A	Powhatan, VA 23139

ATTACHMENT PTA-XIX - PUBLIC INTEREST SERVED

A. REGULATORY REQUIREMENTS

Under the Part A submittal requirements (9VAC20-81-460.K) the applicant for a new solid waste management facility must provide indication that the public interest will be served in one or more of the categories identified in the regulation which include:

- 1. Cost effective waste management for the public within the service area comparing costs of a new facility or facility expansion to waste transfer, or other disposal option;
- 2. The facility provides protection of human health and safety and the environment;
- 3. The facility provides alternatives to disposal including reuse or reclamation;
- 4. The facility allows for the increased recycling opportunities for solid waste;
- 5. The facility provides for energy recovery or the subsequent use of solid waste, or both thereby reducing the quantity of solid waste disposed;
- 6. The facility will support the waste management needs expressed by the host community; or
- 7. Any additional factors that indicate that the public interest would be served by the facility.

The service area for this facility (Facility) is defined via the Host Agreement between the Cumberland County Board of Supervisors and Green Ridge Recycling and Disposal Facility LLC (Green Ridge) approved by the Board on August 2, 2018 as amended on July 11, 2019. In that agreement, the service area is identified as by a 500-mile radius from the Facility excluding the states of New York and New Jersey.

Cumberland County as the host community has indicated its approval of the proposed Facility believing that it will be beneficial to the community and that it will serve the public. Specifically, three items have been cited in the benefits to the community:

Item 1: Cost Effective Waste Management

Cumberland County has been seeking options to mitigate the expenses of its solid waste program for years. In 2006, the County believed that it had an opportunity with Republic Waste Industries to mitigate these costs with Republic opening a landfill in Cumberland. The County also built a new school in anticipation of the Republic landfill. However, this opportunity fell through and Repbulic has withdrawn its permits. As a result, the County sought options to offset its costs and replace the expected revenue from the proposed Republic landfill upon which it was so heavily relying.

To highlight the need, reference is made here to the County's solid waste management plan which outlines the need for cost effective waste management. The local solid waste management plan (SWMP) covers a region defined as Prince Edward County and Cumberland County. Key statements from the SWMP relevant to this discussion include the following:

- "The planning district within which Prince Edward and Cumberland Counties are part of is described as: "one of the most economically challenged regions in the State of Virginia." (Page 5)
- "Both Prince Edward County and Cumberland County are largely rural with few large industries and manufacturing facilities." (Page 5)
- "Scarcity of higher paying salaries continues to impact in a negative manner, a locality's or region's primary source of income its tax base. This in turn, often inhibits growth in the locality or region because investments in needed infrastructures do not happen or are slow to occur." (Page 7)
- Environmentally-sound solid waste management within the two counties remains a significant public function that demands a continuing allocation of resources. (Page 7)
- "Along with highways, railroads, water, wastewater, schools and healthcare providers, well run and funded waste management facilities are an attraction to industrial, commercial and residential development." (underlining added for emphasis) (Page 7)

As reflected in the County's SWMP, Cumberland County needs the Green Ridge Facility because it will provide the County with substantial and much needed revenues, jobs, and relief for the solid waste expenses of Cumberland County, thereby serving the local public interest.

In addition, the County's Host Agreement with Green Ridge outlines numerous ways in which the Cumberland County public will be served. Some of the ways that the public will be served as identified in the Host Agreement include (but are not limited to) the following:

- Section 1.6 Convenience Center at landfill for free disposal by residents; drop off recycling center
- Section 1.7 Free disposal for County government facilities
- Section 2.1 Host Fees based on tonnage and unit cost per ton
- Section 2.2 Initial fees of \$100,000 to defray costs for negotiations
- Section 2.3 Annual contribution \$25,000 for environmental and science public education or other activity as may be agreed upon by both parties.
- Section 2.4 Recreational Facilities Contribution and Economic Opportunities reversion of at least 25 acres to the County at the time of closure for public use; annual payment of \$25,000/year for promotion of economic development; promotion of a training program with the community college system

• Section 3.1 – Landfill Liaison – reimbursement of up to \$100,000 per year for an employee who will inspect landfill operations

(Green Ridge would note that the anticipated total annual revenue to Cumberland County from the Green Ridge facility should be approximately 3 million dollars, which represents almost 20% of the County's current annual budget.)

Item 4: Increased Recycling

Cumberland County will be working with Green Ridge to enhance the County's recycling program. Funding under Section 2.3 of the Host Agreement and additional recycling at the landfill will allow the County to broaden its vision for recycling and expand services to the community. Without the support of Green Ridge (monetarily and operationally), Cumberland County simply could not afford to consider such enhancements. The increased recycling opportunities that Green Ridge would support will serve the public well.

Item 6: Facility Will Support Waste Management Need of Host Community

The Cumberland County Comprehensive Plan outlines a number of goals and objectives for theCumberland community. Under Community Facilities, Objective 6 states: "Develop and maintain appropriate public utilities to support current and future growth of all types in Cumberland County." (Page 103) Policy 6.e states, "Develop and maintain appropriate and cost effective solid waste management facilities, services and programs to serve the needs of citizens, businesses, industries and the environment." The Green Ridge project (convenience center, recycling and disposal), as well as revenues generated by the project will help the County meet these objectives in addition to other goals outlined in the Cumberland Comprehensive Plan.

In short, Cumberland County firmly believes that the interests of the public will be served through the implementation of this project and has therefore supported it through the rezoning and conditional use permit approvals as well as a letter of written support urging DEQ's approval of Green Ridge's permit request.

B. LOCAL SUPPORT

In support of this project the following communities have provided letters of support or expressed interest in future capacity:

- Cumberland County July 13, 2019
- CVWMA June 28, 2019
- Hanover County September 9, 2019
- Ashland December 2, 2019

- Chesterfield County December 3, 2019
- Rappahannock Regional Solid Waste Board December 6, 2019
- Botetourt County December 10, 2019
- Appomattox County December 1, 2019

Copies of these letters are attached.

C. BROADER INTEREST SERVED

The public interest in the broader service area will also be well served by the Green Ridge Facility as outlined in the Preliminary Statement and Demonstration of Need included in Green Ridge's Notice of Intent. Key ways in which the broader public interest will be served include:

- As indicated in the Preliminary Statement and Demonstration of Need in the Notice of Intent, solid waste disposal for Cumberland County is a drain on its limited resources. The Green Ridge facility will offer relief to the County in a number of ways, including reduced disposal and recycling costs, as well as substantial revenues from the host fee and jobs. Cumberland County needs this project and actively supports it.
- Relative to the Cumberland/Prince Edward Region, Cumberland County currently transfers to the Shoosmith Landfill whose future expansion is under litigation; Prince Edward County operates its own landfill with a reported remaining life of 6 years. Thus, the Green Ridge landfill will support this region's solid waste plan once permitted and constructed.
- Contiguous solid waste regions rely heavily on private sector facilities which may or may not be able to support their 20 year goals. Region 2000 has less than 20 years of remaining life and at this time it appears highly doubtful that an expansion will be allowed by the host community. Green Ridge will support this region. In addition, members of the Central Virginia Waste Management Authority, which includes Henrico, Hanover, Goochland, Powhatan, Chesterfield Counties (to name a few), rely heavily on the Shoosmith and Old Dominion landfills, which will reach capacity in the next 20 years (Shoosmith will likely close within the next 3-4 years in light of a recent adverse court decision). The CVWMA therefore has expressed interest in the guaranteeing disposal capacity in the Green Ridge landfill.
- From Initiation of a project to its construction, an increase in landfill capacity can take at least 5–6 years (or longer depending on the project). Capacity is always being consumed. New capacity will always be needed. Green Ridge will provide that needed capacity.
- Several major disposal facilities are currently struggling with local politics and land use issues relative to expansions, including the Shoosmith Landfill, the East End Landfill, and Region 2000. In addition, DEQ has revoked the permit of the Tri-Cities Landfill because of reoccurring violations. Many are rightly concerned about the loss of Shoosmith capacity and its ripple effects through Central Virginia because Shoosmith lost a recent circuit court case involving Chesterfield County's denial of a local certification needed to expand into Shoosmith's proposed quarry cell. Other localities, such as Amherst County, have determined not to utilize their remaining capacity, but to move to a transfer operation

followed by landfill closure. There may be other facilities making decisions that impact available capacity. Green Ridge's capacity will therefore serve the greater good as capacity continues to be lost.

- Many public sector landfills have defined (restricted) service areas and cannot accept waste from out of their service area. This capacity is therefore not available to others in Virginia and should not be a factor in the 20 year calculation. Green Ridge will fill such voids in capacity.
- Tipping fees and disposal costs for local governments are determined by competition and available capacity. Currently, only two companies control almost all of the private waste disposal capacity in Virginia. The Green Ridge facility is needed to increase competition.
- County Waste of Virginia, which will utilize the Green Ridge Recycling and Disposal Facility, currently serves over 237,000 residential accounts as well as VCU, University of Richmond, Liberty University, Lynchburg University, Frito Lay, DuPont, Altria and a plethora of Central Virginia home builders and home owner associations. Without the Green Ridge facility, costs to these entities will increase with the increased distance to a disposal facility and increased tipping fees because of the loss of competition. Indeed, this is already happening. VCU just procured disposal services which increased in 2019 from \$18.89/ton to \$44.30/ton, a reflection purely of cost increased in disposal and the loss of competition in the industry in Virginia.
- Fuel costs will continue rising. Each additional mile traveled will cost citizens of the Commonwealth dollars and increase carbon footprints. The Green Ridge Facility is exceptionally positioned to effectively and efficiently serve the Central and Southwest Virginia region.
- The Green Ridge facility will be open to all localities in Virginia. It is not exclusive like most public landfills. As public landfills reach capacity and as the costs to own and operate a public landfill increase, localities in Virginia will be seeking alternative disposal capacity that is cost effective. Green Ridge will be able to provide such cost effective capacity.
- An assured, cost effective waste disposal system is needed for economic development. Green Ridge will expand the options for commercial and industrial development through its hauling, recycling, and disposal operations.
- The Northeast is in the midst of a crisis vis a vis its disposal capacity, and will need additional options for disposal of its waste. Virginia is likely to get inundated by out-of-state waste as a result, making the need for the Green Ridge project that much more stark.
- As explained at length in Green Ridge's Preliminary Statement to the Demonstration of Need, it is anticipated that within 3-4 years, 99% of Virginia's private landfill capacity will be controlled by just two companies. The Green Ridge facility will not only provide much needed waste disposal capacity, but also will create much needed competition, lowering

Green Ridge Recycling and Disposal Facility Part A Permit Application

Attachment PTA-XIX Public Interest Served Page 6

waste disposal costs for local and state governments as well as citizens and businesses in the Commonwealth.

1 Courthouse Circle | P.O. Box 110 Cumberland. Virginia 23040 Telephone 804 492 3800 Facsimile 804 492 9224 cumberlandcounty.virginia.gov

William F. Osl, Jr District 1 Lloyd Banks Jr
District 2

William K. "Kevin" Ingle
District 3

David E. Meinhard
District 4

Parker H. Wheeler
District 5

July 13, 2019

Mr. James Golden, Regional Director Virginia Department of Environmental Quality Piedmont Regional Office 4949-A Cox Road Glen Allen, Virginia 23060

Mr. Jason Miller, Land Protection Manager Virginia Department of Environmental Quality Piedmont Regional Office 4949-A Cox Road Glen Allen, Virginia 23060

Re: Green Ridge Recycling and Disposal Facility

Part A Application - PTA Attachment XIX - Discussion of Public Interest Served

Dear Mr. Golden and Mr. Miller:

Cumberland County is writing this letter to provide information and support for the Part A application of Green Ridge Recycling and Disposal Facility, LLC (Green Ridge) for the construction and operation of a municipal sanitary landfill in Cumberland County. Specifically, Green Ridge must address how the public interest will be served by the landfill, a matter which was considered by Cumberland County officials upon deliberating the Green Ridge rezoning and the conditional use permit applications. The Board of Supervisors of Cumberland County, supported by staff, specifically considered the following items which also are considerations for your Department under 9VAC20-81-460.K:

1. Cost effective waste management: Currently Cumberland County spends in excess of \$600,000 per year for the hauling and disposal of its solid waste. This cost is a significant percentage of our local revenues, which total just under \$13,000,000, and constitutes the county's greatest single contractual expense. The Board, when considering the facility, discussed the benefit that a local municipal solid waste facility will provide, not only to Cumberland County, but also to other localities which will be able to use the facility. Tipping fees appear to be on the rise, which could only be exacerbated by reducing solid waste disposal capacity in the Commonwealth. In short, Cumberland County, like all localities, must plan now for efficient and low-cost solid waste disposal solutions for the future. In fact, this consideration has been so important to Cumberland County planning that the Cumberland County Comprehensive Plan even provides in pertinent part that one objective of the county is to "[d]evelop and maintain appropriate and cost effective solid waste management facilities, services and programs to serve the needs of citizens, businesses, industries and the environment." The Green Ridge project will help the county achieve this objective.

Mr. James Golden Mr. Jason Miller July 13, 2019 Page Two



- 2. Increased recycling opportunities. Cumberland County is committed to maximizing recycling opportunities for citizens and providing services to assist with environmental quality in the county. For example, once, and sometimes twice, each year, the county hosts a tire collection day. Citizens are encouraged to bring old tires to be recycled, with each citizen being permitted to bring, free of charge, up to one hundred tires. In addition, recycling containers are provided for citizens at each solid waste collection site. And toward the goal of increasing recycling efforts, Cumberland County ensured that there was language in the Green Ridge Host Agreement for the continued provision of recycling containers and services (paragraph 1.6) and funding for environmental and science education. Finally, and because the county continues to explore ways to encourage recycling, staff is exploring with a private partner an opportunity to optimize the recycling of plastic, which Green Ridge representatives have committed to support as well.
- Support the waste management need of the host community. Management of solid waste is the second greatest total departmental expense in Cumberland County, second only to the sheriff's department. Because the Green Ridge facility will provide disposal of the county's solid waste at no charge, leaving only the hauling for the county to be responsible for, the facility will provide a significant benefit to the county's budget. Disposal fees will be eliminated, and the expectation is that hauling will cost significantly less as the hauling distances will be reduced greatly. Further, construction of the Green Ridge facility will ensure not only a less expensive disposal option, but also will ensure that there is, in fact, a disposal option available at all. Upon the publication of the county's last request for bids for the provision of solid waste disposal service, only three companies, including Green Ridge affiliated company County Waste, expressed an interest in bidding. It is not uncommon for there to be only one or two bidders for services in Cumberland County, which has become a constant and growing concern, not just for the disposal of solid waste, but for many services the county needs. However, because the disposal of solid waste is an absolute need, not to mention an environmental concern, the county places high importance on identifying an environmentally responsible manner in which to dispose of its municipal solid waste for decades to come. The Green Ridge facility will ensure the County will have that option at a manageable cost.

In closing, the Board of Supervisors of Cumberland County, Virginia approved on June 28, 2018 the Green Ridge rezoning and conditional use permit applications for the construction and operation of a municipal sanitary landfill. On August 2, 2018, the Cumberland County Board of Supervisors approved a Host Agreement with Green Ridge, which agreement was amended on July 11, 2019. Cumberland County supports the Green Ridge facility in Cumberland County because the County assumes that with oversight by the Virginia Department of Environmental Quality, the facility will be constructed and operated in an environmentally responsible manner. Cumberland County consistently endeavors to work collaboratively with state agencies, and this project is no exception. The County is grateful for the expertise and assistance of DEQ on this and all projects and requests support and assistance in return on the Green Ridge project. We thank you.

Sincerely.

Vivian Seay Giles, J.D., LL.M.

County Attorney | County Administrator



CENTRAL VIRGINIA WASTE MANAGEMENT AUTHORITY

2100 West Laburnum Avenue, Suite 105, Richmond, Virginia 23227 • 804/359-8413 • Fax 804/359-8421 • www.cvwma.com

June 28, 2019

Jerry Cifor Green Ridge Recycling and Disposal Facility, LLC 12230 Deerhill Road Midlothian, VA 23112

RE: Central Virginia Waste Management Authority (CVWMA)
Landfill Capacity Reserve Letter for Green Ridge Recycling and
Disposal Facility, LLC

Dear Mr. Cifor:

On behalf of the thirteen member jurisdictions of the CVWMA (Counties of Charles City, Chesterfield, Goochland, Hanover, Henrico, New Kent, Powhatan and Prince George, the Town of Ashland and the Cities of Colonial Heights, Hopewell, Petersburg and Richmond), please accept this letter as the response to your letters of May 1, 2019 to CVWMA member localities regarding the opportunity for CVWMA member jurisdictions to reserve disposal capacity in the proposed Green Ridge Recycling and Disposal Facility, LLC (Green Ridge).

CVWMA is in the process of updating the regional Solid Waste Management Plant (SWMP), and as a part of that process is evaluating its solid waste disposal needs for the next 20 years. While currently and for the foreseeable future there is adequate landfill airspace to accommodate our disposal needs in the region for the next twenty years, should the Green Ridge Landfill obtain a solid waste permit to operate from the Commonwealth of Virginia, jurisdictions of the CVWMA may need capacity in the future and would like to retain the ability to deliver municipal solid waste to the Green Ridge Landfill. CVWMA or member localities cannot at this time enter into a contract that stipulates or guarantees delivery or reservation of landfill capacity, until such time as deemed necessary and is procured in accordance with the Virginia Public Procurement Act.

One jurisdiction of the CVWMA, the County of Chesterfield, would like to specifically note that they generate approximately 35,000 tons of solid waste annually that could be delivered to the Green Ridge landfill at some point in the future. This is not a guarantee of tonnage and would require that a procurement be completed before a formal commitment could be made to Green Ridge Landfill.

If you have any questions regarding this letter, please do not hesitate to contact me at 804-612-0552.

Singerely

Kimberly K. Hynes Executive Director BOARD OF SUPERVISORS

W. CANOVA PETERSON, CHAIRMAN MECHANICSVILLE DISTRICT

SCOTT A. WYATT, VICE CHAIRMAN COLD HARBOR DISTRICT

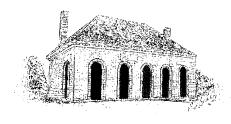
SEAN M. DAVIS, Henry District

WAYNE T. HAZZARD SOUTH ANNA DISTRICT

ANGELA KELLY-WIECEK Chickahominy District

FAYE O. PRICHARD ASHLAND DISTRICT

AUBREY M. STANLEY BEAVERDAM DISTRICT



HANOVER COURTHOUSE

HANOVER COUNTY

ESTABLISHED IN 1720

COUNTY ADMINISTRATOR'S OFFICE

CECIL R. HARRIS, JR. COUNTY ADMINISTRATOR

FRANK W. HARKSEN, JR. DEPUTY COUNTY ADMINISTRATOR

KATHLEEN T. SEAY
DEPUTY COUNTY ADMINISTRATOR

JAMES P. TAYLOR
DEPUTY COUNTY ADMINISTRATOR

WWW.HANOVERCOUNTY.GOV

P.O. BOX 470, HANOVER, VA 23069 7516 COUNTY COMPLEX ROAD, HANOVER, VA 23069

> PHONE: 804-365-6005 FAX: 804-365-6234

September 9, 2019

Green Ridge Recycling and Disposal Facility, LLC Attn: Mr. Cifor 12230 Deerhill Road Midlothian, Virginia 23112

Re: Landfill Capacity Reserve Letter – Hanover County

Dear Mr. Cifor:

Hanover County currently generates approximately 51,600 tons of Municipal Solid Waste annually. By 2023 we anticipate this amount to increase to approximately 55,850 tons. We are currently committed to a contract for disposal and hauling through 2023. Before that contract ends, we will need to re-procure services for both disposal and hauling. Regionally, there will likely be reduced options for disposal as we approach that important procurement due to facilities reaching capacity or otherwise closing and therefore an additional option is important.

Hanover County would like to preserve the option of disposal at the Green Ridge Recycling and Disposal Facility for future procurement. We believe adequate capacity will allow for healthy competition within the marketplace, which is important as we approach the 2023 horizon. This use of the Green Ridge Recycling and Disposal Facility is contingent upon the results of a successful bid through a competitive solicitation process in accordance with the Virginia Public Procurement Act.

We appreciate the opportunity to be considered as a potential future user of the Green Ridge Recycling and Disposal Facility. If there are any questions regarding this request, please let me know.

Sincerely,

Cecil R. Harris, Jr.

County Administrator

Hanover: People, Tradition and Spirit



101 THOMPSON STREET P.O. BOX 1600 ASHLAND, VIRGINIA 23005-4600

> TELEPHONE (804) 798-9219 FAX (804) 798-4892

December 2, 2019

STEVEN P.
TRIVETT
MAYOR

JOHN H. HODGES VICE-MAYOR

GEORGE F. SPAGNA, JR. COUNCIL MEMBER

KATHLEEN K. ABBOTT COUNCIL MEMBER

DANIEL W. MCGRAW COUNCIL MEMBER

JOSHUA S. FARRAR TOWN MANAGER

ANDREA E. ERARD TOWN ATTORNEY

MATTHEW G.
REYNAL
CLERK OF COUNCIL

Green Ridge Recycling and Disposal Facility, LLC ATTN: Mr. Jerry Cifor 12230 Deerhill Road Midlothian, VA 23112

RE: Landfill Capacity Reserve Letter - Town of Ashland

Dear Mr. Cifor,

The Town of Ashland currently generates approximately 1800 tons of Municipal Solid waste annually. We anticipate the amount of solid waste generated annually to increase to approximately 2000 tons by 2024. Our current contract for disposal and hauling services runs through June of 2024. Before the current contract ends, we will need to go through the procurement process for both disposal and hauling services.

The Town of Ashland would appreciate having the option of using the Green Ridge Recycling and Disposal Facility for our municipal solid waste disposal needs as we go through the competitive bid process. We do have a need regionally for more landfills in the future and having options should keep our pricing down.

Therefore, we would appreciate the ability to be considered as a future user of the Green Ridge Recycling and Disposal Facility. If you have any questions regarding this request, please let me know.

Respectfully,

Joshua S. Farrar Town Manager



Chesterfield County, Virginia

Joseph P. Casey, Ph.D., County Administrator 9901 Lori Road - P.O. Box 40 - Chesterfield, VA 23832-0040 Phone: (804) 748-1211 - Fax: (804) 717-6297 - Internet: chesterfield.gov

BOARD OF SUPERVISORS LESLIE A. T. HALEY, CHAIR Midlothian District STEPHEN A. ELSWICK, VICE CHAIR Matoaca District DOROTHY JAECKLE CHRISTOPHER M. WINSLOW Clover Hill District JAMES M. "Jim" HOLLAND Dale District

December 3, 2019

Mr. Jerry Cifor County Waste, Inc. 12230 Deergrove Road Midlothian, VA 23112

Subject: Green Ridge Landfill Capacity Reserve - Chesterfield County

Dear Mr. Cifor:

Chesterfield County currently generates 35,000 tons of Municipal Solid Waste annually from our convenience centers in Chesterfield and related solid waste from County and School facilities. In addition, our citizens generate an additional 254,000 tons annually utilizing a variety of haulers, of which the Shoosmith Landfill is a large recipient of such solid waste. Both of these tonnage figures are expected to increase annually. As we approach the end of our MSW disposal contract in 2023, there will likely be fewer regional options for disposal due to facilities reaching capacity or closing; such as the Shoosmith Landfill. We understand that County Waste will also be fully utilizing this landfill until it reaches capacity in approximately five years.

The proposed Green Ridge Recycling and Disposal facility represents an opportunity to increase waste disposal capacity significantly in Central Virginia, and increase competition, thus providing a potential cost benefit to our county, its residents, and businesses in connection with their waste disposal needs.

We appreciate being considered as a potential future user of the Green Ridge Recycling and Disposal Facility and would like to preserve the option of disposal at that facility for future procurement. We also respect state and local approval processes for any such facility. Please contact county staff with any questions or clarifications regarding this request.

Sincerely,

Joseph P. Casey, Ph.D.

County Administrator



Rappahannock Regional Solid Waste Management Board

489 Eskimo Hill Road • Stafford, Virginia 22554 • 540-658-5279 • FAX 540-658-4523

December 6, 2019

County Waste Green Ridge Recycling and Disposal Facility Attn: Jerry Cifor 12230 Deergrove Rd. Midlothian VA 23112

The Rappahannock Regional Landfill (R-Board) is a regional body that serves the waste management needs for the City of Fredericksburg and Stafford County. Our main focus is in landfilling and moving recyclables to processors.

County Waste is a customer to our landfill and provides waste hauling and recycling services for the commercial businesses and residents of Fredericksburg and Stafford County. They have always been a good environmental steward to our service area and responsive to all service requests. They currently bring in over 4,500 tons per month to our landfill and have always been in good standing with payments.

We have worked with them on community outreach projects such as our Earth Day events which will draw thousands of people each year. They assist with free waste and recycling collection. They also do activities for community events.

They run a transfer station for waste and recycling nearby in Spotsylvania. This has been a valuable resource for the area.

In our experience working with them we feel they are a reliable entity in our waste management community and hope they will continue to provide service to our region.

Respectfully,

Joe Buchanan R-Board Director



Billy W. Martin, Sr. Chair

Donald M. "Mac" Scothorn Vice-Chairman

> Richard G. Bailey DMV Steve P. Clinton I. Ray Sloan

Office of the Administrator

57 South Center Drive Daleville, Virginia 24083 December 10, 2019

Virginia DEQ Richmond, Virginia

To whom it concerns,

I write this letter in support of the Green Ridge project in Cumberland County. The project is the result of years of planning with a vision for the future from the leadership of County Waste and should be allowed to move forward as planned for the benefit of all involved.

County Waste entered into a management agreement with Botetourt County to operate and close the County Landfill. County Waste has been a fabulous partner in this process and I know their leadership can own/operate the Green Ridge project. They have the knowledge, history and resources to fully develop the state of the art facility and bring additional prosperity to Cumberland County. The multiplied benefits of County Waste paying taxes, operating a landfill in the locality and the locality being paid on a per ton basis, is a great deal for the locality. We also feel certain that the Cumberland operation will assist Botetourt (and other localities) meet future waste disposal needs and will support the Transfer Station in Botetourt.

Landfills are complicated and it takes a firm like County Waste to tackle the project with a professional plan of action to make it work.

If the work in Botetourt County is any indication of the work that will take place in Cumberland, the DEQ, Cumberland County and the citizens of the community will be pleased. I would personally be happy to provide further details of the positive relationship Botetourt County has with County Waste if needed.

Sincerely,

Gary Larrowe

County Administrator

Day danowe

Botetourt County, Virginia



P.O. Box 863, Appomattox, VA 24522 Phone: (434) 352-2637 www.AppomattoxCountyVA.gov

December 1, 2019

Mr. Jerry Cifor Green Ridge Recycling and Disposal Facility, LLC 12230 Deerhill Road Midlothian, VA 23112

RE: Appomattox County Letter of Support for the Green Ridge Recycling and Disposal Facility

Dear Mr. Cifor:

On behalf of Appomattox County, I am writing in support of the Green Ridge Recycling and Disposal Facility that your company is seeking to have permitted by the Virginia Department of Environmental Quality ("DEQ"). Appomattox County currently participates in the Region 2000 Service Authority, and the landfill that Region 2000 operates will reach capacity in approximately eight (8) years. Appomattox County currently generates approximately 5,300 tons of municipal solid waste annually, and that number is expected to increase. The Green Ridge facility represents an important option for Appomattox that needs to be available as Appomattox strives to meet its future waste disposal needs.

Moreover, County Waste of Southwest Virginia, LLC ("County Waste") recently obtained a conditional use permit to operate a transfer station in Appomattox County as well as a convenience center for County residents. Appomattox County has a Host Agreement with County Waste for that transfer station under which the County receives a fee for each ton of waste brought to the Appomattox transfer station. The transfer station represents a substantial, much needed revenue source for the County, and the transfer station will to a large extent rely on the Green Ridge facility.

In addition, most of the private landfill capacity in Virginia is controlled by two companies. The proposed Green Ridge Recycling and Disposal facility represents an opportunity to substantially lower waste disposal costs by increasing much needed competition.

In short, Appomattox County strongly supports your company's request for a DEQ permit to construct and operate a municipal solid waste landfill in Cumberland County, and you may submit this letter of support to DEQ in seeking any necessary permits for the facility.

Best Regards,
USWAM M. Adamo

Susan M. Adams, County Administrator

ATTACHMENT PTA-XX - AIRPORT PROXIMITY AND AGENCY COORDINATION

Distance

A Regional Map (**Figure PTA-3**, **Attachment PTA-IX**) with 1-mile, 3-mile, and 5-mile radii lines showing the locations of airports has been developed. As shown on the Regional Map, there are no airports located inside the 5-mile radius of the Green Ridge facility. The nearest airport, Plainview Airport (VA94), is located approximately 13 miles from the Facility.

Public Use

In order to determine the nearest public-use airport, DAA contacted the Virginia Department of Aviation. In a response letter (dated May 6, 2019), Mr. S. Scott Denny, Senior Aviation Planner confirmed that the nearest airport (Plainview) is not a public-use airport. He stated, "The closest public-use airport is Farmville Regional Airport which is located approximately 20+/- miles southwest of the proposed landfill site". The letter of inquiry and Virginia Department of Aviation response letter are included in **Attachment PTA-XX**.

Increased Bird Hazard

Not applicable.

Estimation of Likelihood of Increased Risk

Not applicable.

As shown on the Regional Map, the Facility boundary is not located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used by only piston-type aircraft. Therefore, in accordance with §9 VAC 20-81-120.I.2, it is not required to demonstrate that the units are designed and operated so that the Facility does not pose a bird hazard.

Barbara Hadley

From: Barbara Hadley

Sent: Thursday, May 2, 2019 12:31 PM **To:** director@doav.virginia.gov

Subject: Landfill Siting - Cumberland County, VA

Good afternoon,

We are currently preparing a Part A Permit Application for a proposed new landfill (Green Ridge Recycling & Disposal) in Cumberland County, Virginia. As part of that process, we must establish that there are no public-use airports within a 3-mile radius of our site.

The nearest airport (to our knowledge) is the Plainview Airport (VA94), located on Old Buckingham Road in Cumberland (see map below). While it is located beyond the 3-mile perimeter, we still need to include in our application verification that it is not a public-use airport. Therefore, I am requesting a letter of determination from your offices, verifying that this is not a public-use airport.



If you have any questions or need further details, please do not hesitate to contact me.

Thank you,

Barbara H. Hadley

Staff Project Administrator

Draper Aden Associates

Engineering • Surveying • Environmental Services

Lasting Positive Impact™

Phone: 804.264.2228 • Direct Line: 804.237.1807

We have relocated our Richmond office: 1030 Wilmer Avenue, Suite 100 Richmond, VA 23227

Web • Blog • Facebook • Twitter • LinkedIn



COMMONWEALTH of VIRGINIA

Mark K. Flynn Director

Department of Aviation 5702 Gulfstream Road Richmond, Virginia 23250-2422

V/TDD • (804) 236-3624 FAX • (804) 236-3635

May 6, 2019

Ms. Barbara Hadley, Project Administrator Draper Aden Associates 1030 Wilmer Avenue, Suite 100 Richmond, Virginia 23227

RE: Proposed Cumberland County Landfill, Public-Use Airport Proximity

Dear Ms. Hadley:

The Virginia Department of Aviation received your e-mail dated May 6, 2019. Your e-mail referenced a proposed landfill in Cumberland County and asked if the nearest airport, Plainview Airport (VA94), was a public-use airport. The Plainview Airport is located approximately 13+/- miles from the site you provided in your e-mail not a public a public airport.

The closest public-use airport is Farmville Regional Airport which is located approximately 20+/- miles southwest of the proposed landfill site.

Please do not hesitate to contact me at (804) 236-3638 if you have any questions regarding this matter.

Sincerely,

S. Scott Denny Senior Aviation Planner

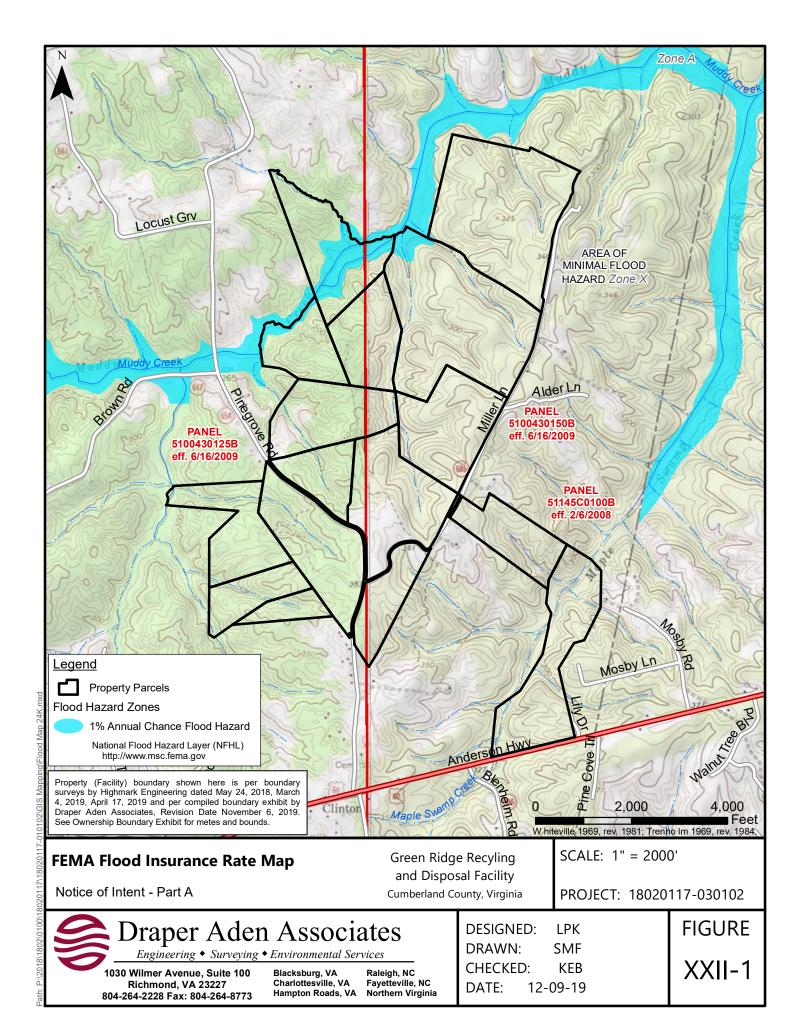
Virginia Department of Aviation

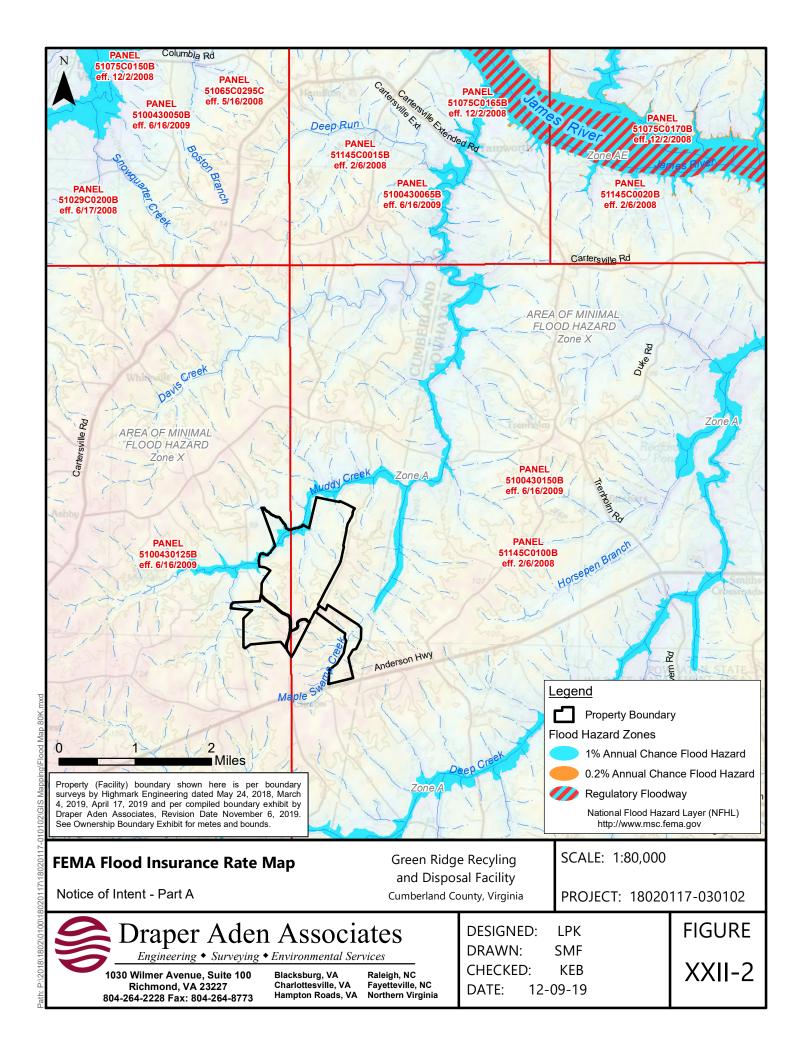
Attachment PTA-XXI FEMA Flood Insurance Rate Map Page 1

ATTACHMENT PTA-XXI - FEMA FLOOD INSURANCE RATE MAP

In accordance with §9 VAC 20-81-120.A, owners or operators of all sanitary landfills located in the 100-year floodplains shall demonstrate that the site will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment. And pursuant to §10.-1408.4.B.1, no new municipal solid waste landfill shall be constructed in a 100-year floodplain.

To evaluate the applicability of the requirements of §9 VAC 20-80-250.A.2, the waste management boundary of the proposed site was compared with the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Cumberland County, Virginia. Based on information from the FEMA FIRM, no portion of the waste management boundary is located within the 100-year floodplain. See Near Vicinity Map (**PTA-IX Figure 2**) relative to this.





Attachment PTA-XXII
Wetlands Demonstration and Agency Coordination
Page 1

ATTACHMENT PTA-XXII - WETLANDS DEMONSTRATION AND AGENCY COORDINATION

In accordance with Code of Virginia 0.1-1408.4.B.2, 10.1-1408.5.E, and VSWMR 9 VAC 20-81-120.E.3, Koontz Bryant Johnson and Williams delineated all wetlands across the Facility and submitted their results to the Army Corps of Engineers on May 11, 2018, as part of a request for a Preliminary Jurisdictional Determination. This request and the delineation study is included in **Appendix LIS-2E**, along with the wetland delineation maps and the final Preliminary Jurisdictional Determination from the Army Corps on August 22, 2019.

Following delineation of wetlands across the Facility, project elements (disposal units, roads, etc.) were modified or eliminated to remove all direct impacts to wetlands. . Documents related to the study are included in this Attachment.



May 11, 2018

Mr. Steven Vanderploeg Army Corps of Engineers Richmond Field Office 9100 Arboretum Parkway, Suite 235 Richmond, VA 23236

Subject: Confirmation of Wetland Boundaries

Pinegrove Road, Cumberland County, VA

Latitude: 37.543032 Longitude: -78.125958

Applicant: CWV, LLC, c/o James H. Martin

P.O. Box 636

Cobbs Creek, VA 23035

Table 1.1: Parcels With	nin Project Boundary
38-A-7	44-A-19A
45-A-1	45-A-7
37-A-69	44-A-22
45-A-20	44-A-21
44-A-19	44-A-14
44-A-36	44-A-13
45-A-11	45-2-2-B
45-1	-40

Dear Mr. Vanderploeg,

Koontz Bryant Johnson Williams has been retained by Mr. James H. Martin of CWV, LLC. to conduct a detailed wetland delineation on the parcels referenced in Table 1.1. The project site is approximately 1,300 acres and is located in the Middle James River drainage basin in Cumberland County off of Pinegrove Road and Anderson Highway. Fieldwork for this project was conducted throughout March and April of 2018.

The project site contains two named creeks, Muddy Creek and Maple Swamp Creek, along with their contiguous wetland systems. The system shows habitats ranging from Upper Perennial to Palustrine Forested/Emergent wetland along with areas of ephemeral and intermittent flow. Resources such as the U.S. Fish and Wildlife Service Wetlands Mapper database and the U.S. Department of Agriculture's Web Soil Survey were consulted throughout the project.

On behalf of our client, CWV, LLC., we request a Preliminary Jurisdictional Determination be performed by the Army Corps of Engineers. We would appreciate the opportunity to meet with you on site and present our findings and our fieldwork. Please coordinate with us to set up a meeting date and time or to discuss any questions there may be regarding our delineation.

Sincerely,

Hannah L. Miller

Environmental Scientist, KBJW

found Mis



WETLAND DELINEATION - Pinegrove Road Cumberland County, Virginia

Project Description

Our project boundaries encompass approximately 1,300 acres of forested and partially cleared land located within Cumberland County, Virginia off of Pinegrove Road and Anderson Highway. This extensive wetland system contains two named creek systems, Muddy Creek on the northwestern portion of the property and Maple Swamp Creek on the southeastern portion, both of which fall beneath the upper perennial (R3) classification. With a drainage basin of 8.31 square miles, the system is topographically driven with the majority of inflow originating from storm water drainage introduced through the surrounding unnamed tributaries that expand inwards throughout the property. These tributaries eventually become more defined and intermittent upstream from any major named creeks. Downstream from the project site, Maple Swamp Creek flows into Muddy Creek which then continues north until it reaches the James River. Vegetation in these areas were dominated by mature and sapling tree growth made up of American Hornbeam (Carpinus caroliniana), American Sycamore (Platanus occidentalis), American Sweetgum (Liquidambar styraciflua) and River Birch (Betula nigra). Other vegetation includes Greenbriar (Smilax rotundifolia) and River Bank Vine (Vitis riparia). Soils throughout the system presented low chromas and other redoximorphic features in field samples. The presence of aquatic fauna was also noted throughout the property ranging from habitat influenced by beaver activity to evidence of amphibian and fish populations.

In addition to the upper perennial sections, there are contiguous broad floodplains that can be found alongside the named creeks. These areas are made up of inundated, low lying areas that are heavily driven by toe of slope features and cyclical flooding of the major creeks. Mostly classified as palustrine forested wetlands (PFO) these sections were usually identified by a change in vegetation that resulted in habitats comprised mostly of plants with an indicator status of OBL or FACW such as Green Arrow Arum (*Peltandra virginica*), Rush (*Juncus effusus*), mature River Birch (*Betula nigra*) and mature American Hornbeam (*Carpinus caroliniana*). Soils in these areas showed low chromas and redoximorphic features along with heavy saturation and standing water.

Please see the attached wetlands map to see a detailed layout of the wetlands system along with a classification for each area mapped. Data point forms for both wetlands and uplands have been generated for Data Points 1-27 which cover the entirety of the site.



Attachments

Preliminary Jurisdictional Determination Application

Wetland Delineation Map

Figure 1A: Vicinity Map

Figure 1B: USGS Topographic Map

Figure 2A: NWI Figure 2B: NWI

Figure 2C: NWI

Figure 3A: Web Soil Survey

Figure 3B: Web Soil Survey

Figure 3C: Web Soil Survey

Associated Map Units for WSS

Wetland/Upland Data Points 1-27



NORFOLK DISTRICT REGULATORY OFFICE PRE-APPLICATION AND/OR JURISDICTIONAL WATERS DETERMINATION REQUEST FORM

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District Regulatory Office 803 Front Street Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at: http://www.nao.usace.army.mil/technical%20services/Regulatory%20branch/homepage.asp

Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

- 1. Date of Request: 5/14/2018
- 2. City or County where property located: Cumberland County
- 3. Address of property and directions (attach a map of the property location and a copy of the property plat): Pinegrove Road and Anderson Highway (Rt. 60), Cumberland County, VA
- 4. Size of property in acres: 1300 acres
- 5. Tax Parcel Number / GPIN (if available): #38-A-7, #45-A-1, #37-A-69, #45-A-20, #44-A-19, #44-A-36, #45-A-11, #44-A-19A, #45-A-7, #44-A-22, #44-A-21, #44-A-14, #44-A-13, #45-2-2-B and #45-1-40
- 6. Name of Nearest Waterway: Muddy Creek and Maple Swamp Creek

7. Brief Description of Proposed Activity, Reason for Preapplication Request, and/or Reason for Jurisdictional Waters Determination Request:

To determine the limits of wetlands on the above-mentioned parcels for potential future development.
8. Has a wetland delineation/determination been completed by a consultant or the Corps on the property previously?
YES NO UNKNOWN

If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available:

Property Owner Contact Information:

Property Owner Name: CWV, LLC; c/o James H. Martin

Mailing Address: P.O. Box 636

City: State: Zip: Cobbs Creek, VA 23035

Daytime Telephone: 804-356-4628

E-mail Address: jameshmartinjr49@gmail.com

If the person requesting the Jurisdictional Determination is **NOT** the Property Owner, please also supply the Requestor's contact information here:

Requestor Name: Koontz Bryant Johnson Williams, Hannah L. Miller, Shannon D. Hill

Mailing Address: 11901 Old Stage Road City: State: Zip: Chester, VA 23836 Daytime Telephone: 804-541-1436

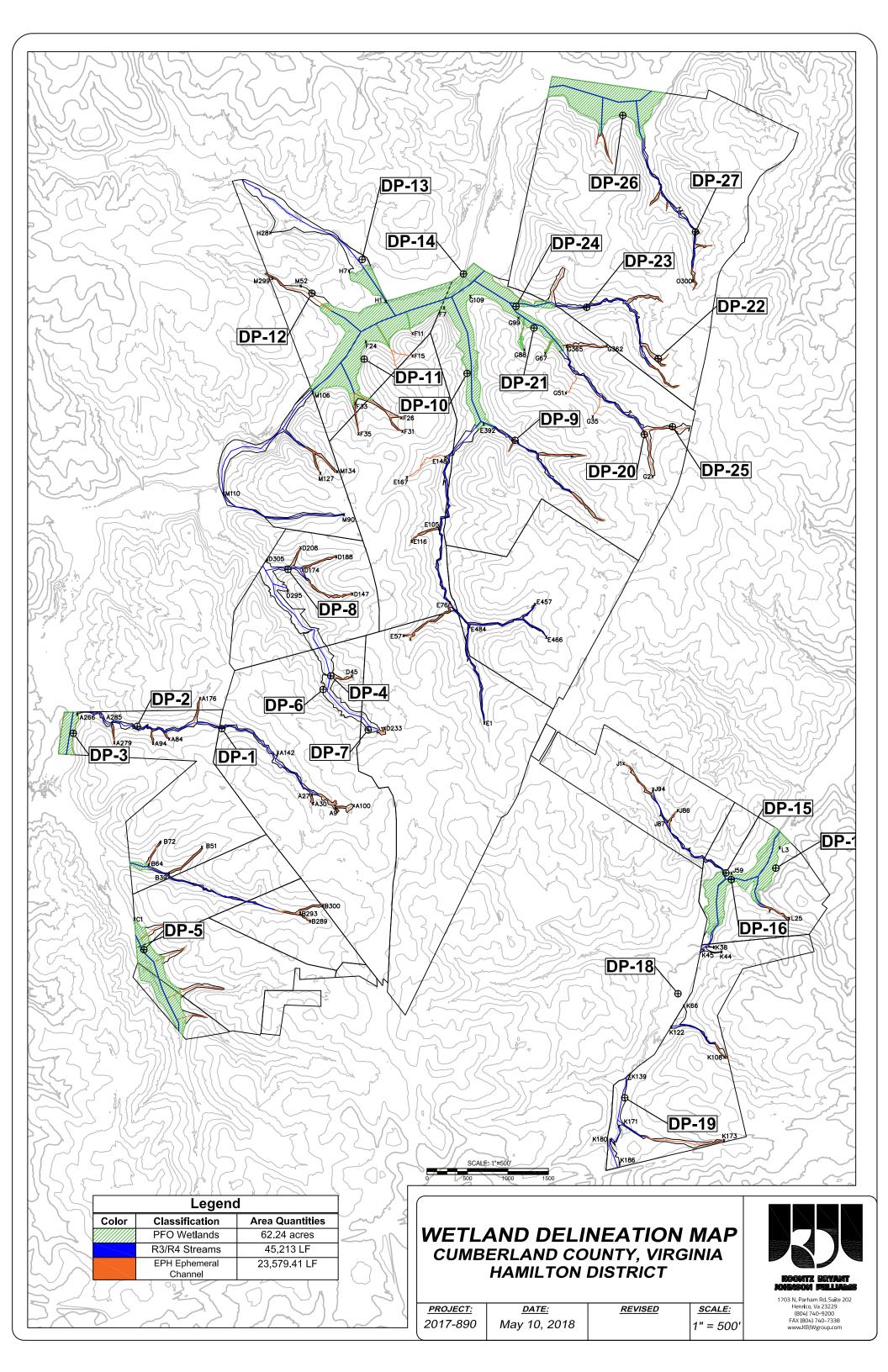
E-mail Address: hmiller@kbjwgroup.com

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:

Property Owner's Signature

5/14/2018



VICINITY MAP FOR CUMBERLAND COUNTY, VIRGINIA: SITE LOCATION

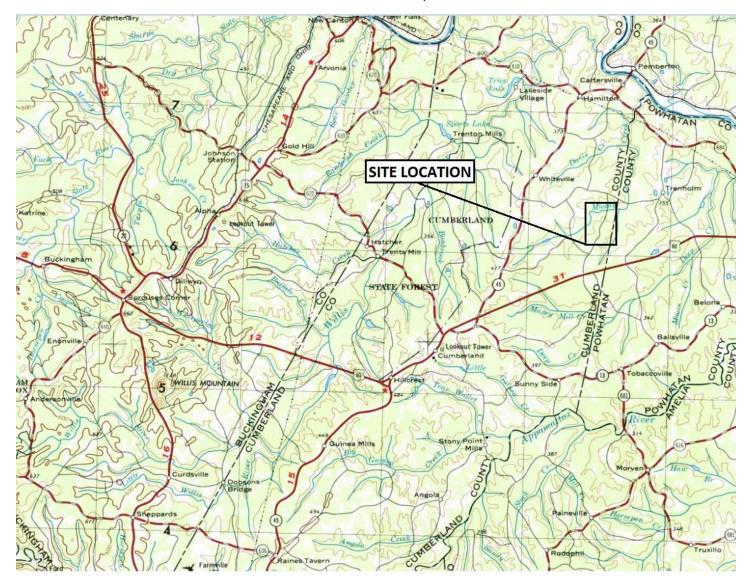




Figure 1A
Vicinity Map
Cumberland County, VA
May 2018

USGS TOPOGRAPHIC MAP OF CUMBERLAND COUNTY, VIRGINIA

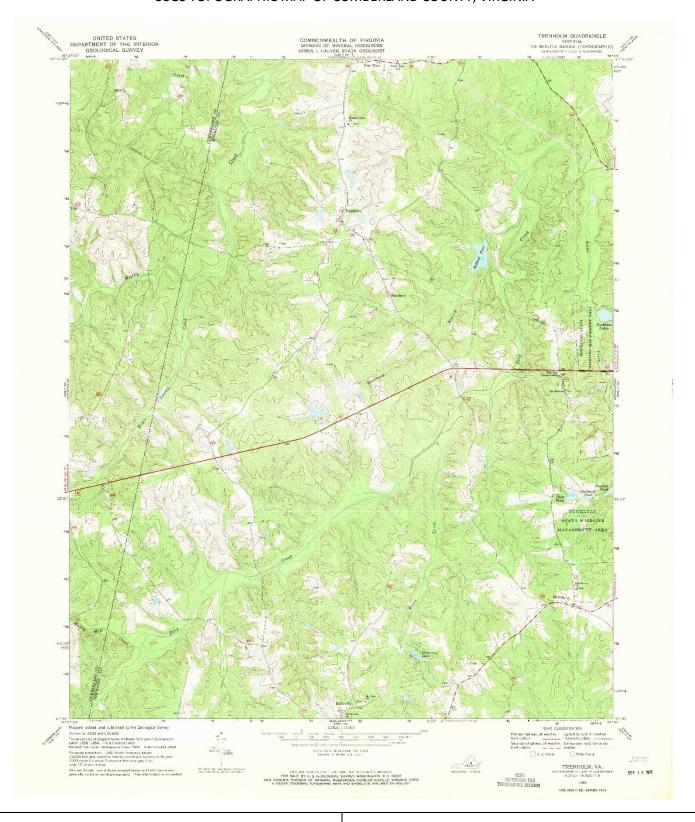
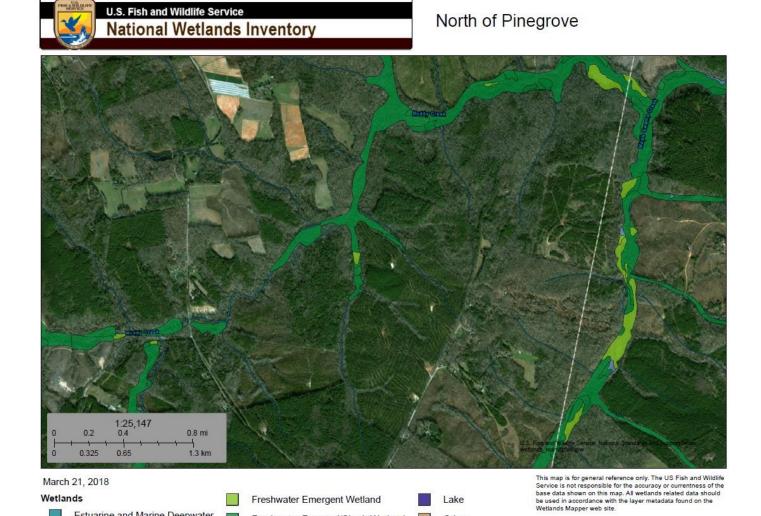




Figure 1B

U.S.G.S. Topographic Map Trenholm Quadrant, 7.5 Minute Series Cumberland County, VA May 2018

WETLANDS SURVEY OF CUMBERLAND COUNTY, VIRGINIA



Freshwater Forested/Shrub Wetland

Freshwater Pond

Other

Riverine



Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Figure 2A

National Wetlands Inventory (NWI) This page was produced by the NWI mapper

National Wetlands Inventory North of Pinegrove Road Cumberland County, VA May 2018

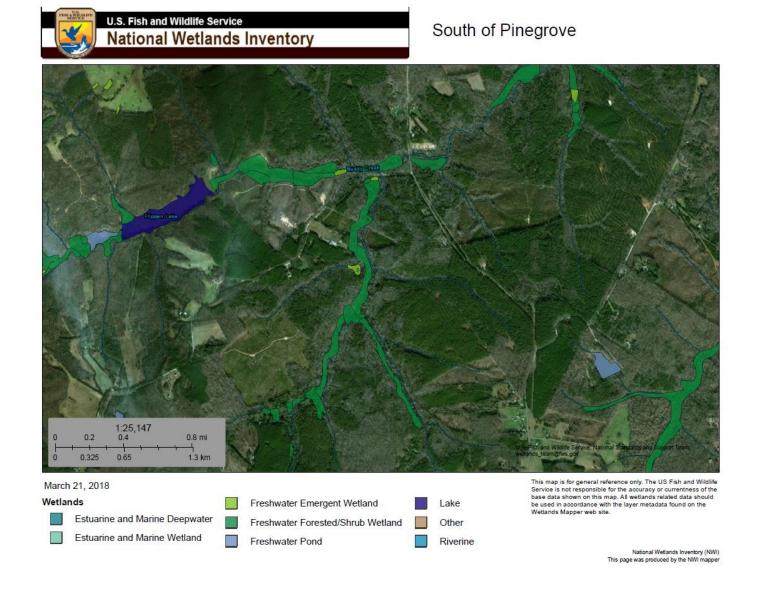




Figure 2B

National Wetlands Inventory South of Pinegrove Road Cumberland County, VA May 2018

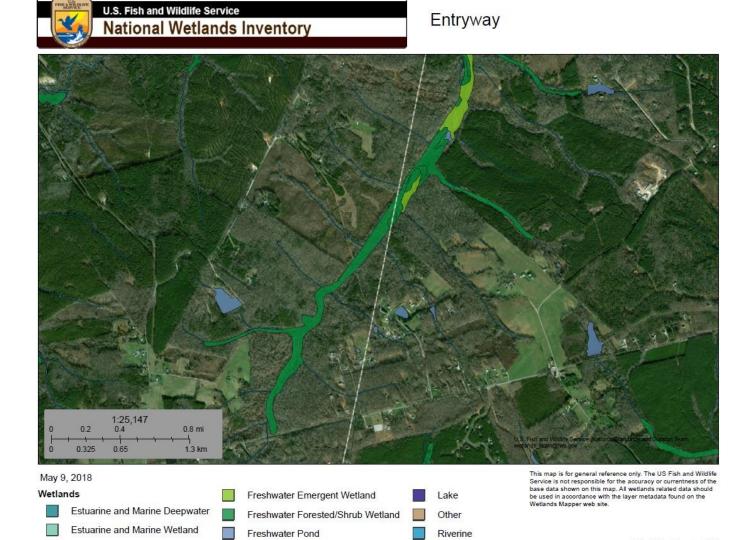




Figure 2C

National Wetlands Inventory (NWI) This page was produced by the NWI mapper

National Wetlands Inventory Entryway off of Pinegrove Road Cumberland County, VA May 2018





Figure 3A

North of Pinegrove Road

Cumberland County, VA

May 2018





Figure 3B South of Pinegrove Road Cumberland County, VA May 2018





Figure 3C
Entryway on Route 60
Cumberland County, VA
May 2018

Figure 3A – North of Pinegrove Road						
Map Unit Symbol	Map Unit Name					
1B	Appling fine sandy loam					
2C	Appling-Helena complex					
6B	Cecil sandy loam					
7C	Cecil sandy clay loam					
8A	Chewacla and Monacan soils					
16B – 16C – 16D	Enon-Helena complex					
21B – 21C	Helena sandy loam					
23B	Mattaponi-Appling complex					
30D	Pacolet-Wateree complex					
32B – 32C – 32D	Poindexter-Wedowee complex					
42D	Wateree sandy loam					

Figure 3B – South of Pinegrove Road						
Map Unit Symbol	Map Unit Name					
1B	Appling fine sandy loam					
2C	Appling-Helena complex					
8A	Chewacla and Monacan soils					
17C	Enon-Helena complex					
21B – 21C	Helena sandy loam					
23B	Mattaponi-Appling complex					
32B – 32C – 32D	Poindexter-Wedowee complex					
42C – 42D	Wateree sandy loam					

Figure 3C - Entryway						
Map Unit Symbol	Map Unit Name					
1B	Appling fine sandy loam					
2C	Appling-Helena complex					
6B	Cecil sandy loam					
7C	Cecil sandy clay loam					
8A	Chewacla and Monacan soils					
16B	Enon-Helena complex					
21B – 21C	Helena sandy loam					
32B – 32C – 32D	Poindexter-Wedowee complex					
41B	Trenholm sandy loam					
42C	Wateree sandy loam					

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Cumberland	County Property	City/County: Cun	nberland County	Sampling Date: 3/29/2018
Applicant/Owner: CWV, LLC; c				Sampling Point: DP-1
	. Hill, Robert Goodwin	Section Township	Pange: Tax Map #44-A	
Landform (hillslope, terrace, et			-	Slope (%): 2-4%
Subregion (LRR or MLRA):n.			ong:78.1324335127	
		100+		
Soil Map Unit Name: Poinde			NWI classific	
· · · · · · · · · · · · · · · · · · ·	tions on the site typical for this time of			
	, or Hydrology significan			present? Yes X No
Are Vegetation, Soil	, or Hydrology naturally	problematic? (I	f needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDING	GS – Attach site map showii	ng sampling poin	t locations, transects	s, important features, etc.
Hydrophytic Vegetation Prese	ent? Yes X No	Is the Samp	lad Araa	
Hydric Soil Present?	Yes X No	io tilo odilip		No
Wetland Hydrology Present?		_		
Remarks:		_		
rtemante.				
Data point was taken r	next to flag A-70.			
HYDROLOGY				
Wetland Hydrology Indicate	ors:		Secondary Indica	ators (minimum of two required)
	of one is required; check all that apply	y)	Surface Soil	
Surface Water (A1)		: Plants (B14)		getated Concave Surface (B8)
		ulfide Odor (C1)	X Drainage Pa	
Saturation (A3)		zospheres on Living R		
Water Marks (B1)		Reduced Iron (C4)		Water Table (C2)
Sediment Deposits (B2)		Reduction in Tilled Soil		
Drift Deposits (B3)	Thin Muck S			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		in in Remarks)		stressed Plants (D1)
Iron Deposits (B5)	Office (Explain	iii iii rtomanoj	X Geomorphic	
Inundation Visible on Ae	rial Imagery (B7)		Shallow Aqu	
X Water-Stained Leaves (E				aphic Relief (D4)
Aquatic Fauna (B13)	55)		FAC-Neutral	
Field Observations:			1 70 Neutra	1 1031 (103)
Surface Water Present?	Yes No X Depth (inch	00/:		
	Yes X No Depth (inch			
Water Table Present?		· —		
Saturation Present? (includes capillary fringe)	Yes No X Depth (inch	es):	Wetland Hydrology Presei	nt? Yes X No
	eam gauge, monitoring well, aerial ph	otos, previous inspecti	ons), if available:	
Remarks:				
Nomano.				

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-1
· · · · · · · · · · · · · · · · · · ·	Absolute	- Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover 20%	Species?	Status	Number of Dominant Species
1. Acer rubrum		YES	FAC	That Are OBL, FACW, or FAC: 6 (A)
2. Betula nigra	15%	YES	FACW	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				
	35%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 17.5	% 20% of	total cover:	7%	Total % Cover of: Multiply by:
	<u>/ 20 / 6 01</u>	iolai covei.		OBL species x 1 =
Sapling Stratum (Plot size: 20'x20') 1 Carpinus caroliniana	20%	YES	FAC	FACW species x 2 =
·· ·	20 /0	11.5	170	FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4	-			Column Totals: (A) (B)
5		· <u></u>		Column Totals(A)
6				Prevalence Index = B/A =
	20%	= Total Cove	er	Hydrophytic Vegetation Indicators:
500 (1.1.) 10%				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 10%	20% of	total cover:	4 /0	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				· · · · · · · · · · · · · · · · · · ·
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
<u>. </u>		= Total Cove		be present, unless disturbed or problematic.
				Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Vaccinium corymbosum	15%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
6.				approximately 3 to 20 ft (1 to 6 m) in height.
	-			All best and a second of a least a least and a least a least and a least a lea
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8	-	-		plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Woody Ville - All Woody Villes, regardless of holym.
	15%	= Total Cove	er	
50% of total cover:7.5%	% 20% of	total cover.	3%	
Woody Vine Stratum (Plot size: 20'x20')	2070 0.	lota: 00.75		
1 Smilax rotundifolia	20%	YES	FAC	
•	10%	YES		
2. Vitis riparia	10%	150	FACW	
3				
4	-			
5		. <u></u>		Undershield
	30%	= Total Cove	er	Hydrophytic Vegetation
50% of total cover:15%				Present? Yes X No
		iolal cover:		
Remarks: (Include photo numbers here or on a separate sl	neet.)			

Sampling Point: DP-1

SOIL

Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Features	Type ¹	Loc ²	Texture		Remarks	
0-4	10YR 3/3	100	Color (moist)	%	Type	LUC	Sandy Loam		Remarks	
	-									
4-18	10YR 7/2	90	7.5YR 5/6	10	C	PL	Sandy Loam			
										
					-					
							2			
	oncentration, D=Dep Indicators:	oletion, RM	=Reduced Matrix, M	S=Masked	Sand Gra	iins.	² Location: PL=F		ng, M=Matrix. roblematic Hy	dria Caila ³ ,
			Douls Confoo	o (C7)					_	
Histosol	oipedon (A2)		Dark Surfac Polyvalue B		- (SR) (M	I D A 1/17			A10) (MLRA 1 4 Redox (A16)	47)
Black Hi			Thin Dark S					ILRA 14		
	en Sulfide (A4)		Loamy Gley			,,			oodplain Soils ((F19)
	d Layers (A5)		X Depleted Ma		,			ILRA 13		,
2 cm Mu	uck (A10) (LRR N)		Redox Dark	Surface (F6	3)		Very	/ Shallow	Dark Surface	(TF12)
	d Below Dark Surfac	e (A11)	Depleted Da				Othe	er (Expla	in in Remarks)	
	ark Surface (A12)		Redox Depr							
	Mucky Mineral (S1) (LRR N,	Iron-Mangar		s (F12) (I	RR N,				
	A 147, 148) Gleyed Matrix (S4)		MLRA 13	•	MI DA 12	2 122\	3Indian	toro of h	ydrophytic veg	otation and
	Redox (S5)		Piedmont FI						logy must be p	
	Matrix (S6)		Red Parent					-	ed or problema	
	Layer (if observed)	:			- · / (····	,			<u> </u>	
Type:										
Depth (in	ches):	,	<u>_</u>				Hydric Soil Pr	esent?	Yes X	No
marks:	, -		<u>-</u>				1 -			

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Cumberland Cour	nty Property	City/County: Cur	nberland County	_ Sampling Date:3/29/2018
Applicant/Owner: CWV, LLC; c/o Ja				Sampling Point: DP-1, UPL
Investigator(s): Shannon D. Hill,		Section, Township.	Range: Tax Map #44-/	
Landform (hillslope, terrace, etc.): H			=	
				Datum:
Soil Map Unit Name: Poindexter W			NWI classifi	
Are climatic / hydrologic conditions on			o (If no, explain in I	
Are Vegetation, Soil,				present? Yes X No
Are Vegetation, Soil, c			f needed, explain any answ	
, con, con,	natural	y problematio: (i	Theodod, explain any answ	ord in recinarios.
SUMMARY OF FINDINGS -	Attach site map show	ing sampling poin	t locations, transect	s, important features, etc.
Hydrophytic Vegetation Present?	Yes No_X	1- 4 0	I. J. A	
Hydric Soil Present?	Yes No_X	Is the Samp within a We	ied Area tland? Yes	No <u>X</u>
Wetland Hydrology Present?	Yes No X			<u> </u>
Remarks:				
Data point was taken adjace	ent to flag A-70.			
HADBOLOGA				
HYDROLOGY Westernd blodged and Indicators:			Cacandani India	notore (minimum of two required)
Wetland Hydrology Indicators:	Communication of the Communication	1. 3		cators (minimum of two required)
Primary Indicators (minimum of one	· · · · · · · · · · · · · · · · · · ·		Surface Soi	
Surface Water (A1)		tic Plants (B14)		egetated Concave Surface (B8)
High Water Table (A2)	· · · · ·	Sulfide Odor (C1)		atterns (B10)
Saturation (A3)		Rhizospheres on Living R		, ,
Water Marks (B1)		of Reduced Iron (C4)		Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3)		n Reduction in Tilled Soil Surface (C7)		/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		plain in Remarks)		Stressed Plants (D1)
Iron Deposits (B5)	Outlot (EX	nam m remarko)		c Position (D2)
Inundation Visible on Aerial Ima	agery (B7)		Shallow Aqu	
Water-Stained Leaves (B9)	9-17 (=17)			raphic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutra	
Field Observations:				· · · · · · · · · · · · · · · · · · ·
	No X Depth (inc	ches):		
	No X Depth (inc	· ·		
	No X Depth (inc		Wetland Hydrology Prese	ent? Yes No X
(includes capillary fringe)				res ne
Describe Recorded Data (stream ga	uge, monitoring well, aerial p	photos, previous inspecti	ons), if available:	
Remarks:				

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-1, UPL
201-201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	35%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Pinus taeda	35%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 33% (A/B)
6				
	70%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 35%	20% of	total cover:	14%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20'		•		OBL species $0 \times 1 = 0$
1. Juniperus virginiana	30%	YES	FACU	FACW species 0 x 2 = 0
2				FAC species 35 x 3 = 105
3				FACU species 65 x 4 = 260
4				UPL species $0 \times 5 = 0$
				Column Totals:100 (A)365 (B)
5	-			Prevalence Index = B/A = 3.65
0	30%	= Total Cove		
4 = 0.7				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 15%	20% of	total cover:	0%	
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2	-			4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3	-			Problematic Hydrophytic Vegetation ¹ (Explain)
4				Trosionate tryanophytic vogetation (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')			_	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1				(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
_				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
				Hank All hank account (see your sky) plants in all dings
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				
		= Total Cove	er	
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cove		Hydrophytic Vegetation
50% of total cover:	20% of	total cover		Present? Yes NoX
		ioiai covei.		
Remarks: (Include photo numbers here or on a separate s	neet.)			

Sampling Point: DP-1, UPL

SOIL

Profile Desc	ription: (Describe	to the dept	h needed to docun	ent the i	ndicator o	or confirm	n the absence of indicators.)
Depth	Matrix		Redox	. Features	3		
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u> <u>Remarks</u>
0-4	10YR 4/3	100					Sandy Loam_
4-12	10YR 5/4	100					Sandy Loam
12-18	10YR 6/4	100					Light Sandy CL
		<u> </u>					
	-						
		- ——					
		<u> </u>					
		letion, RM=	Reduced Matrix, MS	=Masked	Sand Gra	ins.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface				2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Be				
Black His			Thin Dark Su			47, 148)	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		-2)		Piedmont Floodplain Soils (F19)
	Layers (A5) ck (A10) (LRR N)		Depleted Mat Redox Dark S		6)		(MLRA 136, 147) Very Shallow Dark Surface (TF12)
	Below Dark Surfac	e (A11)	Depleted Dar				Other (Explain in Remarks)
	rk Surface (A12)	()	Redox Depre				<u> </u>
	ucky Mineral (S1) (I	LRR N,	Iron-Mangane			_RR N,	
	147, 148)		MLRA 136		. , ,		
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) (MLRA 13	6, 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent M	laterial (F	21) (MLR	4 127, 147	7) unless disturbed or problematic.
Restrictive L	.ayer (if observed):	:					
Type:							
Depth (inc	hes):						Hydric Soil Present? Yes No X
Remarks:							•

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Applicant/Owner_CWY, LLC; 0s James H. Marin Investigator(s): Shannon D. Hill, Robert Goodwin Section, Township, Range: Tax Map #44-A-14 Landform (hillstipe, terrace, etc.): Flooplain Subregion (LRR or MLRA): Ma Lat: 37,56008776 Local relief (concave, convex, none): Subpe (%): 1-3% Subregion (LRR or MLRA): Ma Lat: 37,56008776 Long: 78,138042609 Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: 37,56008776 New Control of the Subregion (LRR or MLRA): Ma Lat: Map Lat: M	Project/Site: Cumberland County	Property City/0	County: Cumberland	d County	Sampling Date: 3/29/2018
Investigator(s): Shannon D. Hill, Robert Goodwin Section, Township, Range: Tax Map #44-A-14 Landform (hillslope, terrace, etc.): Flooptlain Local relief (concave, convex, none): Slope (%): 1-3% Subregion (LRR or MLRA): NB Lat: 37.660008776 Long: -78.136042609 Datum: Soil Map Unit Name: Poindexter Wedowee Complex Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no explain in Remarks.) Are Vegetation Soil or Hydrology algignificantly disturbed? Are "Normal Circumstances" present? Yes X No (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Wetland Hydrology Present? Yes X No Wetland Hydrology Present? Yes X No Surface Water (Art) True Aquatic Plants (B14) Surface Water (Art) True Aquatic Plants (B14) Saturation (A3) Coxidered Rhizospheres on Living Roots (C3) Moss Tirm Lines (B16) Present Present (B16) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Saturation (A3) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Dry-Season Water Table (C2) Saturation (A3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Again in Remarks (B10) Sturded Rock (B4) Dry Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Shallow Aquatiar (D3) Moss Tirm Lines (B16) Scenorphic Position (D2) Shallow Aquatiar (D3) Moss Tirm Lines (B16) Scenorphic Position (D2) Shallow Aquatiar (D3) Moss Tirm Lines (B16) Scenorphic Position (D2) Shallow Aquatiar (D3) Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Water Status (B7) Shallow Aquatiar (D3) Depth (inches): Water Status (B7) Shallow Aquatiar (D3) Depth (inches): Water Abuatian (D3) Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Water Ballow Aquatiar (D3) Depth (inches): Water Ballow Aquatiar (D3) Depth (inches): Water Ball	Applicant/Owner: CWV, LLC; c/o James H.	Martin			
Landform (hillslope, terrace, etc.): Flooplain			ion Township Range		
Subregion (LRR or MLA); International Control (International Control (International Control Co					
Soil Map Unit Name: Poindexter Wedowee Complex Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) Are Vegetation Soil or Hydrology significantly disturbed? Are Normal Circumstances" present? Yes X No (If no, explain in Remarks.) Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrocy Findings – Attach site map showing sampling point locations, transects, important features, etc. Hydrocy Findings – Attach site map showing sampling point locations, transects, important features, etc. Hydrocy Findings – Attach site map showing sampling point locations, transects, important features, etc. Hydrocy Findings – Attach site map showing sampling point locations, transects, important features, etc. Hydrocy Findings – Attach site map showing sampling point locations, transects, important features, etc. Hydrocy Findings – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important features, etc. Indicate – Attach site map showing sampling point locations, transects, important samples, etc. Indicate – Attach site map showing sampling point locations, transects, important samples, etc. Indicates – Attach site					
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Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No Wetland Hydrology Present? Yes No Soil Present Present					
Are Vegetation, Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present?					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Wetland Hydrology Present? Yes X No Wetland Hydrology Present? Yes X No Status Is the Sampled Area within a Wetland? Yes X No Status Is the Sampled Area and Is the Sample Area					
Hydrophytic Vegetation Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Indicators: Data point was taken next to flag A-195. Wetland Hydrology Indicators: Data point was taken next to flag A-195. Wetland Hydrology Indicators: Primary Indicators (minimum of none is required; check all that apply) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Presence of Reduced fron (C4) Diff Deposits (B3) Thin Muck Surface (C7) Alagla Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water Stalined Leaves (B9) Aquatic Fauna (B13) Field Observations: Surface Water Index (Stream gauge, monitoring well, aerial photos, previous inspections), if available:	Are Vegetation, Soil, or H	ydrology naturally problem	atic? (If needed, e	explain any answe	rs in Remarks.)
Hydrophytic Vegetation Present? Wetland Hydrology Present? Wetland Hydrology Present? Wetland Hydrology Indicators: Data point was taken next to flag A-195. Wetland Hydrology Indicators: Data point was taken next to flag A-195. Wetland Hydrology Indicators: Primary Indicators (minimum of none is required; check all that apply) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Presence of Reduced fron (C4) Diff Deposits (B3) Thin Muck Surface (C7) Alagla Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water Stalined Leaves (B9) Aquatic Fauna (B13) Field Observations: Surface Water Index (Stream gauge, monitoring well, aerial photos, previous inspections), if available:	CLIMMA DV OF FINIDINGS A	taab aita waa abawiya aay			immentant factions at
Hydric Soil Present? Yes X No within a Wetland? Yes No	SUMMARY OF FINDINGS – Att	ach site map showing sar	npling point location	ons, transects	, important features, etc.
Hydric Soil Present? Yes X No within a Wetland? Yes No	Hydrophytic Vegetation Present?	Ves X No			
Wetland Hydrology Present? Yes X No				vos X	No
Remarks: Data point was taken next to flag A-195. Wetland Hydrology Indicators: Secondary Indicators (minimum of two required)			Within a Wolland.	100	<u> </u>
Data point was taken next to flag A-195.		103_71			
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Hydrogen Sulfide Odor (C1) Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Water Marks (B1) Sediment Deposits (B2) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Sediment Deposits (B3) Thin Muck Surface (C7) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) Field Observations: Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Cardination (Inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Kemarks.				
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Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) X High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Inundation Visible on Aerial Imagery (B7) Secondary Indicators (D2) Water-Stained Leaves (B9) Microtopographic Relief (D4) Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Wetland Hydrology Present? Yes No No Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Water Table Present? Yes No Depth (inches): Wetland Hydrology Prese					
Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) X High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Inundation Visible on Aerial Imagery (B7) Secondary Indicators (D2) Water-Stained Leaves (B9) Microtopographic Relief (D4) Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Wetland Hydrology Present? Yes No No Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Water Table Present? Yes No Depth (inches): Wetland Hydrology Prese					
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Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) High Water Table (A2) Hydrogen Sulfide Odor (C1) Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) Sediment Deposits (B2) Priff Deposits (B3) Algal Mat or Crust (B4) Inon Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Plants Water Present? Yes No Depth (inches): Water Marks (B1) Prevence of Reduced Iron (C4) Dry-Season Water Table (C2) Crayfish Burrows (C8) Crayfish Burrows (C8) Crayfish Burrows (C8) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				Secondary Indica	ators (minimum of two required)
Surface Water (A1)	= -	equired: check all that apply)			
High Water Table (A2) Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Recent Iron Reduction in Tilled Soils (C6) Drift Deposits (B3) Thin Muck Surface (C7) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) Field Observations: Surface Water Present? Water Table (A2) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D1) Aquatic Fauna (B13) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No No Cincludes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			(D14)		
Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5) Geomorphic Position (D2) Shallow Aquitard (D3) Shallow Aquitard (D3) Microtopographic Relief (D4) Aquatic Fauna (B13) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Saturation Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	1				
Water Marks (B1) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Shallow Aquitard (D3) Microtopographic Relief (D4) Aquatic Fauna (B13) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Saturation Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		· -		=	
Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8) Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			-		
Drift Deposits (B3) Thin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Stunted or Stressed Plants (D1) Stallow Aquitard (D3) Shallow Aquitard (D3) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Stallow Aquitard (D3) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Stallow Aquitard (D3) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Stallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Microtopographic Relief (D4) FAC-Neutral Test (D5) Microtopographic Relief (D4) FAC-Neutral Test (D5) Microtopographic Relief (D4)					
Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1) Iron Deposits (B5)				-	
Iron Deposits (B5) Shallow Aquitard (D2) Shallow Aquitard (D3) Shallow Aquitard (D3) Shallow Aquitard (D3) Shallow Aquitard (D3) Shallow Aquitard (D4) Shallow Aquitard (D4) Shallow Aquitard (D4) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Field Observations: Surface Water Present?					
Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Aquatic Fauna (B13) FAC-Neutral Test (D5) FAC-Neutral Test (D5) Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		Other (Explain in Re	marks)		
		(DZ)			, ,
Aquatic Fauna (B13) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes NoX Depth (inches): Water Table Present? YesX No Depth (inches): Saturation Present? Yes NoX Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		y (B7)			
Field Observations: Surface Water Present? Yes No _X Depth (inches): Water Table Present? Yes _X No Depth (inches): _4" Saturation Present? Yes _No _X Depth (inches): Wetland Hydrology Present? Yes _X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Surface Water Present? Yes NoX Depth (inches): Water Table Present? Yes _X No Depth (inches): Saturation Present? Yes No _X Depth (inches): Wetland Hydrology Present? Yes _X No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				FAC-Neutral	Test (D5)
Water Table Present? Yes X No Depth (inches): 4" Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes X No Depth (inches): Includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes X No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	<u> </u>				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		No X_ Depth (inches):	Wetland H	Hydrology Preser	t? Yes <u>X</u> No
		e, monitoring well, aerial photos, pr	evious inspections), if ava	ailable:	
Remarks:		,,	- · · · · · · · · · · · · · · · · · · ·		
Tollians.	Remarks:				
	Nomano.				

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	mes of p	olants.		Sampling Point: DP-2
201-201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover 30%	Species?		Number of Dominant Species
1. Ilex opaca		YES YES	FAC	That Are OBL, FACW, or FAC: 4 (A)
2. Carpinus caroliniana	30%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
	60%	= Total Cove	∍r	
50% of total cover: 30%	20% of	total cover:	12%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20'	_		_	OBL species x 1 =
1				FACW species x 2 =
2				FAC species x 3 =
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6				Prevalence Index = B/A =
		= Total Cove		Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover:	20% of	total cover:_		2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	=	= Total Cove	er .	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		_
Herb Stratum (Plot size: 20'x20')	_			Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1				(7.6 cm) or larger in diameter at breast height (DBH).
2				Carling Woody plants, evaluding woody vines
3				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
<u>4</u>			-	than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
				Harb All harbassaya (non woody) plante including
7 8				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11			-	-
		= Total Cove		
50% of total cover:	20% of	total cover:_		
Woody Vine Stratum (Plot size: 20'x20')				
1. Vitis riparia	30%	YES	FACW	
2. Smilax rotundifolia	10%	YES	FAC	
3				
4				
5				Lhadranhadia
	40% :	= Total Cove	∍r	Hydrophytic Vegetation
50% of total cover: _ 20%				Present? Yes X No
Remarks: (Include photo numbers here or on a separate sh		lutai cuvoi.		
remarks. (include prioto numbers here or on a separate si	ieei.)			

SOIL Sampling Point: DP-2

Profile Desc	cription: (Describe	to the dep	th needed to docur	ment the	indicator	or confirm	the absenc	e of indica	ators.)		
Depth	Matrix			x Feature	s						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	<u> </u>	Remark	S	
0-4	10YR 3/3	100					Sandy Lo	am			
4-18	10YR 6/2	85	7.5YR 5/8	15	С	PL	Sandy Loa	m			
								- !			
	-	· ——		-							
								_			
								_			
				-							
					· 	-					
					·			_			
	-							_			
¹ Type: C=C	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Masked	d Sand Gra	ains.			ining, M=Matr		
Hydric Soil	Indicators:						Indi	cators for	Problematic	Hydric Soils ³ :	
Histosol	l (A1)		Dark Surface	. ,				2 cm Muck	(A10) (MLR	\ 147)	
	pipedon (A2)		Polyvalue Be				148)	Coast Prai	rie Redox (A1	6)	
	istic (A3)		Thin Dark Su			47, 148)			147, 148)		
	en Sulfide (A4)		Loamy Gleye		(F2)		_		Floodplain Soi	ils (F19)	
	d Layers (A5)		X Depleted Ma		-0)				136, 147)	(TE40)	
	uck (A10) (LRR N) d Below Dark Surfac	o (A11)	Redox Dark Surface (F6) Very Shallow Dark Surface (TF12)								
	ark Surface (A12)	e (ATT)	Depleted Dark Surface (F7) Other (Explain in Remarks) Redox Depressions (F8)								
	Mucky Mineral (S1) (L	RR N.	Redox Depressions (Fo) Iron-Manganese Masses (F12) (LRR N,								
	A 147, 148)	,	MLRA 136)								
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122) 3Indicators of hydrophytic vegetation and							regetation and	
Sandy F	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present,						e present,		
	d Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 147	7) u	nless distu	rbed or proble	ematic.	
Restrictive	Layer (if observed):										
Type:			<u></u>								
Depth (in	iches):						Hydric So	il Present	? Yes <u>×</u>	No	
Remarks:											

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Cumberland C	County Property	City/C	county: Cumberlar	nd County	Sampling Date: 3/29/2018
Applicant/Owner: CWV, LLC; o			,		Sampling Point: DP-2, UPL
Investigator(s): Shannon D.		n Sectio	on Township Range		
• ,,					Slope (%): 1-3%
Subregion (LRR or MLRA): n/a			Long:		
Soil Map Unit Name: Poindext			Long		cation: UPL
			/aa X Na		
Are climatic / hydrologic condition				_ (If no, explain in F	
Are Vegetation, Soil					present? Yes X No No
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (if needed	l, explain any answe	ers in Remarks.)
SUMMARY OF FINDING	S – Attach site ma	ap showing san	npling point locat	ions, transects	s, important features, etc.
Hydrophytic Vegetation Presen	it? Yes	No_X	la tha Campulad Apad	_	
Hydric Soil Present?	Yes		Is the Sampled Area within a Wetland?		NoX
Wetland Hydrology Present?	Yes				
Remarks:					
rtemarke.					
Data point was taken ac	Ijacent to flag A-195	5.			
HYDROLOGY					
Wetland Hydrology Indicator				Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of	fone is required; check	all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	_	True Aquatic Plants (B14)	Sparsely Ve	egetated Concave Surface (B8)
High Water Table (A2)	<u> </u>	Hydrogen Sulfide Od	or (C1)	Drainage Pa	atterns (B10)
Saturation (A3)	(Oxidized Rhizospher	es on Living Roots (C3) Moss Trim L	ines (B16)
Water Marks (B1)	1	Presence of Reduced	d Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	!	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Bu	rrows (C8)
Drift Deposits (B3)		Thin Muck Surface (0	C7)	Saturation V	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	(Other (Explain in Rer	marks)	Stunted or S	Stressed Plants (D1)
Iron Deposits (B5)				Geomorphic	Position (D2)
Inundation Visible on Aeria	ıl Imagery (B7)			Shallow Aqu	uitard (D3)
Water-Stained Leaves (B9)			Microtopogr	aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutra	l Test (D5)
Field Observations:					
Surface Water Present?	Yes No _X	Depth (inches):			
Water Table Present?	Yes No _X_	Depth (inches):			
Saturation Present?	Yes No _X_	Depth (inches):	Wetland	l Hydrology Prese	nt? Yes No _X_
(includes capillary fringe)				ellahla.	
Describe Recorded Data (strea	im gauge, monitoring w	eii, aeriai priotos, pre	evious inspections), if a	valiable:	
Remarks:					

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	ames of	plants.		Sampling Point: DP-2, UPL
201/201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	30%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Pinus taeda	30%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 25% (A/B)
6				
	60%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: _ 30%	, 9 20% of	f total cover:	12%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')		lotal oc.o		OBL species $0 \times 1 = 0$
1. Juniperus virginiana	15%	YES	FACU	FACW species $0 \times 2 = 0$
Fagus grandifolia		YES	FACU	FAC species 30 x 3 = 90
				FACU species x 4 = 280
3				UPL species x 5 =0
4				Column Totals: (A) (B)
5	-			3.70
6	40%			Prevalence Index = B/A = 3.70
		= Total Cove		Hydrophytic Vegetation Indicators:
50% of total cover: 20%	<u>6</u> 20% of	f total cover:	8%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
0		= Total Cove	or	be present, unless disturbed or problematic.
				Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1		.		(7.6 cm) or larger in diameter at breast height (DBH).
2	-			Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4	· 			than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				it (1 III) iii neigiit.
11				Woody vine – All woody vines, regardless of height.
		= Total Cove		
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size: 20'x20')				
1		. ———		
2				
3				
4				
5				
		= Total Cove		Hydrophytic Vegetation
50% ()				Present? Yes No
		total cover:		
50% of total cover:Remarks: (Include photo numbers here or on a separate s		total cover:		Tresent: TesNo

Sampling Point: DP-2, UPL

SOIL

Depth (in a land)	Matrix		Redox Features	2 Toologo Booredo
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc	
0-4	10YR 4/3			Sandy Loam
4-18	10YR 5/4	100		Sandy Loam
		 		_
		pletion, RM=R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
ydric Soil II	ndicators:			Indicators for Problematic Hydric Soils ³ :
_ Histosol (Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Below Surface (S8) (MLRA	
_ Black His			Thin Dark Surface (S9) (MLRA 147, 14	
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	Layers (A5) ck (A10) (LRR N)		Depleted Matrix (F3)Redox Dark Surface (F6)	(MLRA 136, 147) Very Shallow Dark Surface (TF12)
	Below Dark Surfa	ce (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	rk Surface (A12)	(/ (/ / /	Redox Depressions (F8)	Guior (Explain in remaine)
	ucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR N	l,
	147, 148)	•	MLRA 136)	•
_ Sandy G	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122) ³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Floodplain Soils (F19) (MLR	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127)	unless disturbed or problematic.
estrictive L	ayer (if observed):		
Type:			<u> </u>	
Donth line	hes):		<u> </u>	Hydric Soil Present? Yes No X
nehin (inc				<u> </u>
Depth (inc				

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Cumberland	County Property	City/County	Cumberland	d County	Sampling Date: 3/29/2018
Applicant/Owner: CWV, LLC; c	/o James H. Martin	Only/ Ocumy: _		State: VA	Sampling Point: DP-3
Investigator(s): Shannon D		Castian Tau	nahin Dangar	State Tax Map # 44- <i>P</i>	Sampling Follit. <u></u>
• · · / <u></u>		Section, row	nsnip, Range:	na):	Slope (%): 2-4%
					Datum:
Soil Map Unit Name: Poinde				NWI classific	
Are climatic / hydrologic condit				(If no, explain in R	
Are Vegetation, Soil					present? Yes X No
Are Vegetation, Soil	, or Hydrologyr	naturally problematic?	(If needed,	explain any answe	rs in Remarks.)
SUMMARY OF FINDING	GS – Attach site map	showing sampling	point location	ons, transects	, important features, etc.
Hydrophytic Vegetation Prese	ent? Yes X N	o Is the	Camania di Anna		
Hydric Soil Present?			Sampled Area a Wetland?	Yes X	No
Wetland Hydrology Present?		lo	a violana.	.00	
Remarks:					
Data point was taken r	next to flag A-260.				
HYDROLOGY					
Wetland Hydrology Indicate	ors:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum		that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)		e Aquatic Plants (B14)			getated Concave Surface (B8)
X High Water Table (A2)		rogen Sulfide Odor (C1)		X Drainage Par	
Saturation (A3)		dized Rhizospheres on Li	ving Roots (C3)	X Moss Trim Li	
Water Marks (B1)		sence of Reduced Iron (C			Water Table (C2)
Sediment Deposits (B2)		ent Iron Reduction in Tille		X Crayfish Buri	
Drift Deposits (B3)		Muck Surface (C7)	(23)	-	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		er (Explain in Remarks)			tressed Plants (D1)
Iron Deposits (B5)	<u>—</u>	, , , , , , , , , , , , , , , , , , , ,		X Geomorphic	
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqui	
X Water-Stained Leaves (E					aphic Relief (D4)
X Aquatic Fauna (B13)	-,			FAC-Neutral	
Field Observations:				_	
Surface Water Present?	Yes No <u>X</u> De	nth (inches):			
Water Table Present?	Yes X No De				
Saturation Present?	Yes No _X_ De	· · · · ——	Wetlend	Uvdralami Drasan	nt? Yes X No
(includes capillary fringe)	res No De	ptri (inches):	vvetiand	nyarology Presen	it? res No
Describe Recorded Data (stre	eam gauge, monitoring well,	aerial photos, previous in	spections), if ava	ailable:	
Remarks:	-				
B13: Beaver pond wa	as present in the area.				

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific na	mes of p	plants.		Sampling Point: DP-3
2017201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Acer rubrum	30%	YES	FAC	That Are OBL, FACW, or FAC: 3 (A)
2. Fagus grandifolia	20%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 75% (A/B)
6				Provelence Index weaksheets
	50%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: <u>25</u> %	20% of	total cover:	10%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')				OBL species x 1 =
1. Carpinus caroliniana	25%	YES	FAC	FACW species x 2 =
2				FAC species x 3 =
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6.				Provolence Index = P/A =
0	25%	= Total Cove		Prevalence Index = B/A = Hydrophytic Vegetation Indicators:
10.50				
50% of total cover: 12.5°	<u>%</u> 20% of	total cover:	5%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				Froblematic Hydrophytic vegetation (Explain)
5				10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		_
Herb Stratum (Plot size: 20'x20')	20/0 0.	total cover.		Tree – Woody plants, excluding woody vines,
				approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1				
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4		. ———		
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximatory o to 20 ft (1 to 0 fil) in noight.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				WOOdy VIIIe - All Woody VIIIes, regardless of height.
		= Total Cove	er	
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size: 20'x20')		•		
1. Smilax rotundifolia	25%	YES	FAC	
2				
3				
4				
5	25%	T-1-1-0		Hydrophytic
40.5		= Total Cove		Vegetation
50% of total cover: 12.5	20% of	total cover:	5%	riesent: res // NO
Remarks: (Include photo numbers here or on a separate sl	heet.)			

SOIL Sampling Point: DP-3

Profile Desc	ription: (Describe	to the dep	th needed to docur	ment the i	indicator	or confirm	n the absence of indicators.)				
Depth	Matrix		Redo	x Feature	s						
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture Remarks				
0-4	10YR 3/2	100					Sandy Loam				
4-18	10YR 7/1	90	7.5YR 6/6	_10	С	PL	Sandy Loam				
		<u> </u>			-						
					-						
¹ Type: C=Co		oletion, RM	=Reduced Matrix, M	S=Masked	d Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :				
-			Dorle Curfood	(07)			-				
Histosol	oipedon (A2)		Dark Surface Polyvalue Be		ce (S8) (N	II DA 1 <i>1</i> 7	2 cm Muck (A10) (MLRA 147) , 148) Coast Prairie Redox (A16)				
Black Hi			Polyvalue Be		. , .		(MLRA 147, 148)				
	en Sulfide (A4)		Loamy Gleye	, ,		,,	Piedmont Floodplain Soils (F19)				
	d Layers (A5)		X Depleted Ma		,		(MLRA 136, 147)				
2 cm Mu	ıck (A10) (LRR N)		Redox Dark	Surface (F	- 6)		Very Shallow Dark Surface (TF12)				
	d Below Dark Surfac	e (A11)	Depleted Da				Other (Explain in Remarks)				
	ark Surface (A12)		Redox Depressions (F8)								
	Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,								
	A 147, 148) Gleyed Matrix (S4)		MLRA 136) Umbric Surface (F13) (MLRA 136, 122) *Indicators of hydrophytic vegetation and								
	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present,								
	Matrix (S6)		Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic.								
	Layer (if observed)	:			, (,	- Programmes				
Type:											
Depth (inc	ches):						Hydric Soil Present? Yes X No				
Remarks:											
rtomants.											

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Cumberland County Property C	ity/County: Cumberland County Sampling Date: 3/29/2018
Applicant/Owner: CWV, LLC; c/o James H. Martin	State: VA Sampling Point: DP-3, UPL
Investigator(s): Shannon D. Hill, Robert Goodwin S	
	al relief (concave, convex, none): Slope (%):2-4%
Subregion (LRR or MLRA):n/a Lat:37.55978226	1 Long:78.138765453 Datum:
Soil Map Unit Name: Poindexter Wedowee Complex	NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year	
Are Vegetation, Soil, or Hydrology significantly d	\checkmark
Are Vegetation, Soil, or Hydrology significantly d	
Are vegetation, Soil, or Hydrology hattirally prob	ernatic? (if fleeded, explain any answers in Kemarks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No_X	In the Sampled Area
Hydric Soil Present? Yes No_X	Is the Sampled Area within a Wetland? Yes NoX
Wetland Hydrology Present? Yes No X	
Remarks:	
Data point was taken adjacent to flag A-260.	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plai High Water Table (A2) Hydrogen Sulfide	
	bheres on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Red	
	uction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface	
Algal Mat or Crust (B4) Other (Explain in	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes NoX Depth (inches):	
Water Table Present? Yes No _X_ Depth (inches):	
Saturation Present? Yes No _X_ Depth (inches):	Wetland Hydrology Present? Yes NoX
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos	, previous inspections), if available:
Demodes	
Remarks:	

VEGETATION (Five Strata) – Use scientific names of plants.

/EGETATION (Five Strata) – Use scientific r	names of	plants.		Sampling Point: DP-3, UPL
001-001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	·	Species?		Number of Dominant Species
1. Liriodendron tulipfera	25%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Pinus taeda	25%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Descent of Deminant Charles
5				Percent of Dominant Species That Are OBL, FACW, or FAC:
6				, ,
	50%	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: _ 25	% 20% of	total accord	10%	Total % Cover of: Multiply by:
	<u>70 </u>	total cover.	1070	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20')	200/	\/F0	FACIL	FACW species <u>0</u> x 2 = <u>0</u>
1. Fagus grandifolia			FACU	FAC species <u>25</u> x 3 = <u>75</u>
2. Juniperus virginiana				FACU species 75 x 4 = 300
3				UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 375 (B)
5				
6				Prevalence Index = $B/A = 3.75$
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: _ 25				1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	20 / 01	iolai covei.		2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover		Definitions of Five Vegetation Strata.
201/201	20 /0 01	total cover.		Tree – Woody plants, excluding woody vines,
				approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1	_			(7.0 cm) of larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				trian 3 iii. (7.0 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6	_			approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11				Woody vine - All woody vines, regardless of height.
···-		= Total Cov		
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size: 20'x20')				
1	_			
2				
3				
4				
5				
				Hydrophytic
50% of total cover:	20% of	total cover:		100
50% of total cover:Remarks: (Include photo numbers here or on a separate	20% of	= Total Cov total cover:		Végetation Present? Yes NoX

Sampling Point: DP-3, UPL

SOIL

	Matrix	%	Redox Features	Type ¹ Loc ²	Texture		Domorko	
(inches) 0-4	Color (moist)	100	Color (moist) %	Type Loc			Remarks	i
	10YR 4/3				Sandy Lo	<u>a</u> m		
4-12	10YR 5/6	100			Sandy Loa	<u>m</u>		
12-18	10YR 6/6	100			Sandy Loar	<u> </u>		
						_		
						_		
	-							
	-							
ype: C=Cc	oncentration, D=Dep	oletion, RM=	Reduced Matrix, MS=Masked S	Sand Grains.	² Location:	PL=Pore Lini	ng, M=Matrix	⟨.
	ndicators:	•	,			icators for P		
Histosol	(A1)		Dark Surface (S7)			2 cm Muck (A10) (MLRA	147)
	pipedon (A2)		Polyvalue Below Surface		148)	Coast Prairie	Redox (A16	5)
_ Black His			Thin Dark Surface (S9) ((MLRA 14		
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	2)		Piedmont Flo		s (F19)
	l Layers (A5) ick (A10) (LRR N)		Depleted Matrix (F3) Redox Dark Surface (F6)	١		(MLRA 13 Very Shallov		o (TF12)
	d Below Dark Surfac	ce (A11)	Depleted Dark Surface (,		Other (Expla		. ,
	ark Surface (A12)	,	Redox Depressions (F8)			(<u></u>		-,
	lucky Mineral (S1) (LRR N,	Iron-Manganese Masses					
	\ 147, 148)		MLRA 136)					
	lleyed Matrix (S4)		Umbric Surface (F13) (M			ndicators of h		-
-	edox (S5)		Piedmont Floodplain Soi			wetland hydro		
	Matrix (S6)	<u> </u>	Red Parent Material (F2	1) (MLRA 127, 147	7)	unless disturb	ed or problei	matic.
estrictive L	_ayer (if observed)	1-						
Turner								X
Type:	-h).				Liverinia C	-:I D10	V	
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>×</u> _
Depth (inc	ches):		_		Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):		<u> </u>		Hydric Se	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric Se	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^_</u>
	ches):				Hydric S	oil Present?	Yes	No_ <u>^</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No_ <u>^</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No <u>^</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No_ <u>^</u>
Depth (inc	ches):				Hydric S	oil Present?	Yes	No
Depth (inc	ches):				Hydric S	oil Present?	Yes	

Project/Site: Cumberland	County Property	Citv/C	county: Cumberlan	nd County	Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; of					Sampling Point: DP-4
Investigator(s): Hannah L.		dwin Section	on Townshin Range		
					Slope (%): 1-3%
Subregion (LRR or MLRA):n	/a 1/	37.554453962	Long: -78	8.133166947	
Soil Map Unit Name: Waterl		at		NWI classific	
		for this time of the O			
Are climatic / hydrologic condit				(If no, explain in F	
Are Vegetation, Soil		-			present? Yes X No No
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (If needed,	, explain any answe	ers in Remarks.)
SUMMARY OF FINDIN	GS – Attach site	map showing san	pling point locati	ions, transects	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area		
Hydric Soil Present?	Yes X		within a Wetland?	$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	Yes X				_
Remarks:					
					· ·
Data point was taken i	next to flag B-265.				
HYDROLOGY					
Wetland Hydrology Indicate	ors:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum	of one is required; che	eck all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	_	_ True Aquatic Plants (B14)	Sparsely Ve	egetated Concave Surface (B8)
X High Water Table (A2)	_	_ Hydrogen Sulfide Od	or (C1)	X Drainage Pa	atterns (B10)
Saturation (A3)		_ Oxidized Rhizospher) Moss Trim L	ines (B16)
Water Marks (B1)	_	_ Presence of Reduced	d Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	_	_ Recent Iron Reductio	n in Tilled Soils (C6)	X Crayfish Bur	rrows (C8)
Drift Deposits (B3)	_	_ Thin Muck Surface (C	27)	Saturation V	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	_	_ Other (Explain in Rer	narks)	Stunted or S	Stressed Plants (D1)
Iron Deposits (B5)				X Geomorphic	Position (D2)
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqu	ıitard (D3)
X Water-Stained Leaves (E	39)			Microtopogr	aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutra	l Test (D5)
Field Observations:					
Surface Water Present?	Yes NoX	Depth (inches):			
Water Table Present?		Depth (inches): 6"			
Saturation Present?		Depth (inches):		Hydrology Prese	nt? Yes X No
(includes capillary fringe)				-	
Describe Recorded Data (str	eam gauge, monitoring	y well, aerial photos, pre	vious inspections), if av	/ailable:	
Remarks:					

/EGETATION (Five Strata) – Use scientific na	ames of _l	plants.		Sampling Point: DP-4
201-201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Betula nigra	25%	YES	FACW	That Are OBL, FACW, or FAC:
2. Liquidambar styraciflua	20%	YES	FAC	Total Number of Dominant
3. Acer rubrum	10%	<u>YES</u>	FAC	Species Across All Strata: 6 (B)
4				Developed of Developed Consider
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)
6				11td 7tt 0 0 22, 17to 17to (775)
	==0/	= Total Cove	<u></u>	Prevalence Index worksheet:
50% of total cover: 27.5				Total % Cover of: Multiply by:
	20% of	total cover:	1170	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')	050/	VEC	EAC	FACW species x 2 =
1. Carpinus caroliniana	25%	YES	FAC	FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Column Totals (A) (B)
6.				Prevalence Index = B/A =
·	25%	= Total Cove		Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: <u>12.5</u>	20% of	total cover:	5%	
Shrub Stratum (Plot size: 20'x20'				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3	·			data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
0		- Total Cov		be present, unless disturbed or problematic.
		= Total Cove	2 1	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	5%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10	· 			Woody vine – All woody vines, regardless of height.
11				Woody vine All woody vines, regardless of neight.
	5%	= Total Cove	er	
50% of total cover: 2.5%	6 20% of	total cover:	1%	
Woody Vine Stratum (Plot size: 20'x20')	2070 01	10101 00101.		
Smilay rotundifolia	15%	YES	FAC	
''			170	
2				
3	· 			
4				
5				Lludranhutia
	15%	= Total Cove	er	Hydrophytic Vegetation
50% of total cover: 7.5				Present? Yes X No
		iolai COVEI.		
Remarks: (Include photo numbers here or on a separate s	sneet.)			

SOIL Sampling Point: DP-4

Profile Desc	ription: (Describe	to the dep	th needed to docur	ment the i	ndicator	or confirm	n the absence of indicators.)					
Depth			Redo	x Feature	S							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks					
0-4	10YR 3/2	100					Sandy Loam					
4-18	10YR 6/2	90	7.5YR 5/8	10	C	PL	Sandy Loam					
	-											
¹ Type: C=Co	oncentration. D=Dec	letion. RM	=Reduced Matrix, M	S=Masked	Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix.					
Hydric Soil			. toddood maan, m				Indicators for Problematic Hydric Soils ³ :					
Histosol	(A1)		Dark Surface	e (S7)			2 cm Muck (A10) (MLRA 147)					
	pipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,						
Black Hi	stic (A3)		Thin Dark Su	urface (S9)	(MLRA 1	47, 148)	(MLRA 147, 148)					
	n Sulfide (A4)		Loamy Gleye		F2)		Piedmont Floodplain Soils (F19)					
	d Layers (A5)		X Depleted Ma	. ,			(MLRA 136, 147)					
	ick (A10) (LRR N)	(* ()	Redox Dark	,	,		Very Shallow Dark Surface (TF12)					
	d Below Dark Surfac	e (A11)	Depleted Da				Other (Explain in Remarks)					
	ark Surface (A12) lucky Mineral (S1) (I DD NI		Redox Depressions (F8)								
	147, 148)	LKK N,	Iron-Manganese Masses (F12) (LRR N, MLRA 136)									
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122) 3Indicators of hydrophytic vegetation and									
	ledox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present									
	Matrix (S6)		Red Parent N									
Restrictive I	_ayer (if observed)	:		<u> </u>								
Type:												
Depth (inc	ches):						Hydric Soil Present? Yes X No					
Remarks:	, -		-									

Project/Site: Cumberland Co	unty Property	City/County:	Cumberland	County	Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; c/o					Sampling Point: DP-4, UPL
Investigator(s): Hannah L. Mille		Section, Towns	ship, Range: T	ax Map #44-A-1	13
Landform (hillslope, terrace, etc.): _					
Subregion (LRR or MLRA): n/a					
Soil Map Unit Name: Wateree sa			_	NWI classificat	
Are climatic / hydrologic conditions		e of year? Yes X		If no, explain in Re	
Are Vegetation, Soil			Are "Normal		esent? Yes X No
Are Vegetation, Soil				explain any answers	
, con	, or rivarologynature	any problematio:	(II Ticcaca, c.	Apidin any anowers	in Remarks.)
SUMMARY OF FINDINGS	 Attach site map sho 	wing sampling p	oint locatio	ns, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes No_X	la tha C	lad Auss		
Hydric Soil Present?	Yes No_X		ampled Area Wetland?	Yes	No <u>X</u>
Wetland Hydrology Present?	Yes No X	(
Remarks:					
Data point was taken adja	cent to flag B-265.				
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indicate	ors (minimum of two required)
Primary Indicators (minimum of or	ne is required; check all that :	annly)		Surface Soil C	
Surface Water (A1)	•				etated Concave Surface (B8)
High Water Table (A2)		uatic Plants (B14) n Sulfide Odor (C1)		Drainage Patte	
Saturation (A3)	· -	Rhizospheres on Livi	na Roots (C3)	Moss Trim Line	
Water Marks (B1)		e of Reduced Iron (C4			ater Table (C2)
Sediment Deposits (B2)		ron Reduction in Tilled		Crayfish Burro	
Drift Deposits (B3)		ck Surface (C7)		-	ble on Aerial Imagery (C9)
Algal Mat or Crust (B4)		xplain in Remarks)			essed Plants (D1)
Iron Deposits (B5)				Geomorphic P	
Inundation Visible on Aerial Ir	nagery (B7)			Shallow Aquita	ard (D3)
Water-Stained Leaves (B9)				Microtopograp	hic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral T	est (D5)
Field Observations:					
Surface Water Present? Ye	es No X Depth (i	inches):			
Water Table Present? Ye	es No X Depth (i	inches):			
Saturation Present? Ye	es No X Depth (i	inches):	Wetland H	ydrology Present	? Yes No <u>X</u>
(includes capillary fringe) Describe Recorded Data (stream	gauge monitoring well acris	l photos provious inst	poctions) if avai	ilabla:	
Describe Recorded Data (Stream	gauge, monitoring well, aena	ii priotos, previous irisi	Dections), ii avai	liable.	
Demodes					
Remarks:					

Tree Stratum (Plot size: _20'x20') 1. Liriodendron tulipfera 2. Pinus taeda 3 4 5	25%	Dominant Species? YES YES		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A) Total Number of Dominant
1. Liriodendron tulipfera 2. Pinus taeda 3	25%	YES YES	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. Pinus taeda 34	20%	YES		
34			FAC	Total Number of Dominant
4				
				Species Across All Strata: (B)
5				Description of Description
				Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)
6.	45%			(12)
	7570	= Total Cov	/er	Prevalence Index worksheet:
50% of total cover: _ 22	5% 20% of	total acuer	. 9%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20% 01	total cover.		OBL species $0 \times 1 = 0$
4 Indiana distributa	200/	VE0	FACIL	FACW species <u>0</u> x 2 = <u>0</u>
1. Juniperus virginiana		YES	FACU	FAC species 30 x 3 = 90
2. Ilex opaca	10%	YES	FAC	FACU species
3				UPL species 0 x 5 = 0
4		· 		Column Totals: 100 (A) 370 (B)
5				
6				Prevalence Index = B/A = 3.70
	30%	= Total Cov	er er	Hydrophytic Vegetation Indicators:
50% of total cover: _ 15	% 20% of	total cover:	- 6%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	2070 01	10101 00101		2 - Dominance Test is >50%
_				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3		· -		Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5		· 	· ——	¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		The Mandage of the Control of the Co
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1. Diphasiastrum digitatum	25%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Continue Was de plante avaledin a construir a
2		•		Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
٠	_	· -		Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6		· 		
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10		· 		Woody vine – All woody vines, regardless of height.
11				Woody vine - All woody vines, regardless of neight.
	25%	= Total Cov	er er	
50% of total cover: _12.	5% 20% of	total cover:	: 5%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
3				
4				
5				Hydrophytic
		= Total Cov	er er	Vegetation Present? Yes No
50% of total cover:	20% of	total cover:		Present? Yes NoX
Remarks: (Include photo numbers here or on a separate	sheet.)			

Sampling Point: DP-4, UPL

SOIL

Profile Desc	ription: (Describe	to the dept	h needed to docun	ent the in	dicator o	or confirm	n the absence of indicators.)
Depth	Matrix		Redox	(Features			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 4/3	100					Sandy Loam_
4-10	10YR 5/6	100					Sandy Loam
10-18	10YR 6/4	100					Sandy Loam
	-						
						·	·
							
1Tuno: C. C.		lotion DM	Daduard Matrix MC	Mooked			21 continue DI Doro Lining M Motrice
Hydric Soil I	oncentration, D=Dep Indicators:	ietion, Rivi=	Reduced Matrix, MS	=IVIasked :	Sand Gra	iins.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)			2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		e (S8) (M	LRA 147,	
Black Hi			Thin Dark Su				(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			. ,	Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		Depleted Mat				(MLRA 136, 147)
2 cm Mu	ick (A10) (LRR N)		Redox Dark S				Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Dar				Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre				
	Mucky Mineral (S1) (L	_RR N,	Iron-Mangane		s (F12) (L	RR N,	
	\ 147, 148)		MLRA 136	•	AL DA 40	c 400)	31. disatana at huduankutia ua matatian and
	Bleyed Matrix (S4) Redox (S5)		Umbric Surfa Piedmont Flo				³ Indicators of hydrophytic vegetation and wetland hydrology must be present,
	Matrix (S6)		Red Parent M				
	_ayer (if observed):	i	Red r arent iv	iateriai (i Z	i) (WILIX)	1 121, 141	unless disturbed of problematic.
Type:							
	ches):		 ;				Hydric Soil Present? Yes No X
Remarks:	,						
· · · · · · · · · · · · · · · · · · ·							

Project/Site: Cumberland	County Prope	rty _{Ci}	ity/County: Cumb	perland County	_ Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; c		<u> </u>	,,		Sampling Point: DP-5
Investigator(s): Hannah L.	Miller, Robert G	oodwin s	ection Township R	ange: Tax Map # 44	campling rount:
• , ,					Slope (%):1-3%
					Olope (70)
Soil Map Unit Name: Poinde				NWI classif	· · · · · · · · · · · · · · · · · · ·
Are climatic / hydrologic condit			? Yes No _	(If no, explain in	
Are Vegetation, Soil					present? Yes X No No
Are Vegetation, Soil	, or Hydrology	naturally probl	lematic? (If n	eeded, explain any answ	ers in Remarks.)
SUMMARY OF FINDIN	GS – Attach si	te map showing s	sampling point	locations, transect	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes	X No	Is the Sample	d Area	
Hydric Soil Present?		X No	within a Wetla	and? Yes \times	No
Wetland Hydrology Present?	Yes _	X No			
Remarks:					
5					
Data point was taken i	next to flag C-7.				
HYDROLOGY					
Wetland Hydrology Indicate	ors.			Secondary India	cators (minimum of two required)
Primary Indicators (minimum		check all that apply)		•	il Cracks (B6)
	or one is required,		oto (D14)		, ,
Surface Water (A1)		True Aquatic Plan			egetated Concave Surface (B8)
		Hydrogen Sulfide		∑ Drainage P	
Saturation (A3)		Oxidized Rhizosp	_		
Water Marks (B1)		Presence of Redu		· ·	n Water Table (C2)
Sediment Deposits (B2)		Recent Iron Redu			
Drift Deposits (B3)		Thin Muck Surface			Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in	Remarks)	Stunted or Geomorphi	Stressed Plants (D1)
Iron Deposits (B5) Inundation Visible on Ae	rial Imagary (P7)				
X Water-Stained Leaves (E				Shallow Aq	raphic Relief (D4)
X Aquatic Fauna (B13))))			FAC-Neutra	
			1	rac-neutr	11 Test (D3)
Field Observations:	V Na	Y Booth Contras			
Surface Water Present?		X Depth (inches):			
Water Table Present?	<u> </u>	Depth (inches):			~
Saturation Present? (includes capillary fringe)	Yes No _	X Depth (inches):	w	etland Hydrology Prese	ent? Yes <u>X</u> No
Describe Recorded Data (stre	eam gauge, monito	ring well, aerial photos,	previous inspection	s), if available:	
·					
Remarks:					
B13: Small fish were	e present within	n the stream.			

/EGETATION (Five Strata) – Use scientific na	mes of p	olants.		Sampling Point: DP-5
	Absolute	Dominant	Indicator	Dominance Test worksheet:
		Species?		Number of Dominant Species
1. Betula nigra	25%	YES	FACW	That Are OBL, FACW, or FAC: 4 (A)
2. Liquidambar styraciflua	30%	YES	FAC	Total Number of Dominant
3. Acer rubrum	10%	YES	FAC	Species Across All Strata: 5 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)
6.				That Are OBL, FACW, or FAC: 80% (A/B)
0	65%	= Total Cov		Prevalence Index worksheet:
22.50				Total % Cover of: Multiply by:
50% of total cover: <u>32.5</u> °	<u></u> 20% of	total cover:	13%	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')				FACW species x 2 =
1. Lindera benzoin	10%	YES	FAC	FAC species x 3 =
2				
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
				Prevalence Index = B/A =
6	10%	= Total Cov		
				Hydrophytic Vegetation Indicators:
50% of total cover: 5%	20% of	total cover:	2%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				✓ 2 - Dominance Test is >50%
1. Microstegium vimineum	15%	YES	FAC	3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
i				Problematic Hydrophytic Vegetation ¹ (Explain)
4 5.				
· -				¹ Indicators of hydric soil and wetland hydrology must
6	150/			be present, unless disturbed or problematic.
	15%	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover: <u>7.5%</u>	20% of	total cover:	3%	Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1				(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
T				Shouth Woody plants evaluating woody vines
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cov	er	
500/ - (1-1-1-1				
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size: 20'x20')	100/	\/=0	E40	
1. Smilax rotundifolia	10%	YES	FAC	
2				
3				
4				
5.				
	10%	= Total Cov	er	Hydrophytic Vegetation
50/2				Present? Yes X No
50% of total cover: 5%		total cover:	4 /0	<u> </u>
Remarks: (Include photo numbers here or on a separate sh				1

Sampling Point: DP-5

	Matrix Color (moist)	%	Color (moist)	ox Features %	Type ¹	Loc ²	Texture		Remarks	
inches) 0-3	10YR 3/3	100	Coloi (Illoist)	70	туре	LUC	Sandy Loa		Remarks	
	-							-		
3-18	10YR 6/2	85	7.5YR 5/8	15	С	PL_	Sandy Loan	າ		
<u> </u>										
								-		
					_					
/po: C-C	ancontration D-Do	nlotion PM	=Reduced Matrix, M	S_Mackad S	Sand Gra	inc	² Location: D		ing, M=Matrix.	
	Indicators:	pielion, Kivi	=Reduced Matrix, M	S=IVIASKEU S	banu Gra	1115.			roblematic Hy	dric Soils ³
Histosol			Dark Surfac	e (S7)					A10) (MLRA 1	
	oipedon (A2)		Polyvalue B		(S8) (M	LRA 147.			Redox (A16)	- 11)
Black Hi			Thin Dark S		. , .			(MLRA 14	, ,	
	n Sulfide (A4)		Loamy Gley			•	P		oodplain Soils	(F19)
Stratified	d Layers (A5)		X Depleted Ma	atrix (F3)				(MLRA 13		
	ick (A10) (LRR N)			Surface (F6)				•	v Dark Surface	, ,
	Below Dark Surfac	ce (A11)	Depleted Da				<u> </u>	ther (Expla	in in Remarks)
	ark Surface (A12)	I DD N	Redox Depr			DD N				
	lucky Mineral (S1) (\ 147, 148)	LKK N,	Iron-Mangar		6 (F 12) (L	.KK N,				
	Gleyed Matrix (S4)		Umbric Surf	•	LRA 13	5. 122)	³ Ind	icators of h	ydrophytic veg	etation and
	ledox (S5)		Piedmont FI						logy must be p	
-	Matrix (S6)			Material (F2				-	ed or problem	
	_ayer (if observed)):								
	_ayer (if observed)):								
estrictive I):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (inc):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (inc):	<u></u>				Hydric Soil	Present?	Yes X	. No
strictive I Type: Depth (inc):	<u> </u>				Hydric Soil	Present?	Yes_X	No
strictive I Type: Depth (inc):	<u> </u>				Hydric Soil	Present?	Yes X	. No
strictive I Type: Depth (inc):					Hydric Soil	Present?	Yes_X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (inc):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes_X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes_X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes_X	No
strictive I Type: Depth (ind):					Hydric Soil	Present?	Yes X	No
Type: Depth (inc):					Hydric Soil	Present?	Yes X	No
estrictive L Type:):					Hydric Soil	Present?	Yes X	No
Type: Depth (inc):					Hydric Soil	Present?	Yes X	No
Type: Depth (inc):					Hydric Soil	Present?	Yes X	No
Type: Depth (inc):					Hydric Soil	Present?	Yes X	No
Type: Depth (inc):					Hydric Soil	Present?	Yes X	No
Type: Depth (inc):					Hydric Soil	Present?	Yes X	No

Project/Site: Cumberland Cou	nty Property	City/County: C	umberland Co	unty _{Samp}	oling Date: 4/2/2018
Applicant/Owner: CWV, LLC; c/o J		_ , , , _			mpling Point: <u>DP-5, UPL</u>
Investigator(s): Hannah L. Miller		Section, Townsh	nip. Range: Tax N	Лар #44-A-13	1 5 1 = 1 = 1 = 1
Landform (hillslope, terrace, etc.): <u>H</u>					Slope (%): 3-5%
Subregion (LRR or MLRA): n/a					
Soil Map Unit Name: Poindexter V				NWI classification:	
Are climatic / hydrologic conditions o		of year? Yes X		, explain in Remarks	
Are Vegetation, Soil,					? Yes X No
Are Vegetation, Soil,				n any answers in Re	
Are vegetation, ooii,	or rrydrologyriaturally	y problematic:	(II riceded, explain	n any answers in re	smarks.)
SUMMARY OF FINDINGS -	Attach site map show	ing sampling p	oint locations,	transects, imp	ortant features, etc.
Hydrophytic Vegetation Present?	Yes No_X_	lo the Sa	mulad Araa		
Hydric Soil Present?	Yes No_X		mpled Area Wetland?	Yes No	o X
Wetland Hydrology Present?	Yes No X				
Remarks:					
Data point was taken adjac	ent to flag C-7.				
HYDROLOGY					
Wetland Hydrology Indicators:			Seco	ondary Indicators (m	ninimum of two required)
Primary Indicators (minimum of one	e is required; check all that ap	ply)		Surface Soil Cracks	
Surface Water (A1)	True Aquat				Concave Surface (B8)
High Water Table (A2)		Sulfide Odor (C1)		Drainage Patterns (
Saturation (A3)	· · · · ·	hizospheres on Livin		Moss Trim Lines (B	
Water Marks (B1)		of Reduced Iron (C4)		Dry-Season Water ⁻	
Sediment Deposits (B2)		n Reduction in Tilled		Crayfish Burrows (C	
Drift Deposits (B3)	Thin Muck	Surface (C7)	;	Saturation Visible o	n Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Exp	lain in Remarks)	;	Stunted or Stressed	l Plants (D1)
Iron Deposits (B5)			(Geomorphic Positio	n (D2)
Inundation Visible on Aerial Im-	agery (B7)			Shallow Aquitard (D)3)
Water-Stained Leaves (B9)			!	Microtopographic R	elief (D4)
Aquatic Fauna (B13)				FAC-Neutral Test ([) 55)
Field Observations:	.,				
	s No X Depth (inc				
	s No _X_ Depth (inc				
Saturation Present? Yes	s No X Depth (inc	ches):	Wetland Hydro	logy Present? You	es No <u>X</u>
(includes capillary fringe) Describe Recorded Data (stream g	auge monitoring well aerial r	hotos previous insp	ctions) if available	.	
Describe Recorded Data (stream g	adge, monitoring well, denai p	motos, previous mop	otionoj, ii avaliabio	•	
Remarks:					
Nemarks.					

/EGETATION (Five Strata) – Use scientific na	mes of	olants.		Sampling Point: DP-5, UPL
201-201	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	30%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Pinus taeda	25%	YES	FAC	Total Number of Dominant
3. Fagus grandifolia	15%	YES	FACU	Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 20% (A/B)
6				
	70%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 35%	20% of	total cover:	14%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')		•	<u> </u>	OBL species 0 x 1 = 0
	10%	YES	FACU	FACW species 0 $x = 0$
2. Fagus grandifolia			FACU	FAC species 25 $x 3 = 75$
3				FACU species x 4 = 0
4				UPL species $0 \times 5 = 0$
5				Column Totals: (A) (B)
6				Prevalence Index = B/A = 3.75
0		= Total Cove		Hydrophytic Vegetation Indicators:
100/				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 10%	20% of	total cover:	4 /0	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3	-			Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree Meady plants avaluding woody vines
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	10%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.	,			than 3 in. (7.6 cm) DBH.
5	,			Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				it (1 m) in neight.
11.				Woody vine – All woody vines, regardless of height.
		= Total Cove	<u></u>	
500/ (t				
50% of total cover: <u>5%</u>	20% of	total cover:	2%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cove	er	Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No X
Remarks: (Include photo numbers here or on a separate sh	neet.)			I

Sampling Point: DP-5, UPL

SOIL

	Matrix	%	Redox Features	Type ¹ Loc ²	Texture		Domorle	
(inches) 0-4	Color (moist)	100	Color (moist) %	Type Loc			Remarks	5
	10YR 5/3				Sandy Lo	<u>a</u> m		
4-10	10YR 5/6	100			Sandy Loa	<u>m</u>		
10-18	10YR 6/6	100			Sandy Loar	<u> </u>		
						_		
						_		
						_		
			<u> </u>					
ype: C=Co	oncentration, D=Dep	pletion, RM=	Reduced Matrix, MS=Masked S	and Grains.	² Location:	PL=Pore Lini	ng, M=Matri	х.
	Indicators:					icators for P		
_ Histosol	(A1)		Dark Surface (S7)			2 cm Muck (410) (MLRA	147)
	pipedon (A2)		Polyvalue Below Surface		148)	Coast Prairie		6)
_ Black His			Thin Dark Surface (S9) (N			(MLRA 14		(= 1.5)
	n Sulfide (A4)		Loamy Gleyed Matrix (F2))	_	Piedmont Flo		s (F19)
	d Layers (A5) ick (A10) (LRR N)		Depleted Matrix (F3)Redox Dark Surface (F6)			(MLRA 13 Very Shallov		م (TF12)
	d Below Dark Surfac	ce (A11)	Depleted Dark Surface (F			Other (Expla		. ,
	ark Surface (A12)	,	Redox Depressions (F8)	,	_			-/
_ Sandy M	lucky Mineral (S1) (LRR N,	Iron-Manganese Masses	(F12) (LRR N ,				
	A 147, 148)		MLRA 136)		2			
-	Gleyed Matrix (S4)		Umbric Surface (F13) (MI			ndicators of h		-
-	ledox (S5)		Piedmont Floodplain Soils			wetland hydro		
	Matrix (S6) _ayer (if observed)	\ <u>-</u>	Red Parent Material (F21) (IVILKA 127, 147	')	unless disturb	ed or proble	matic.
	Layer (II Observed)							
Туре:					Hudric S	oil Brosont?	Vos	No X
Type:			_		Hydric S	oil Present?	Yes	No <u></u> ×
Type:					Hydric S	oil Present?	Yes	No_X
Type:			<u> </u>		Hydric S	oil Present?	Yes	No_ <u>×</u> _
Type:					Hydric S	oil Present?	Yes	No_X
Type:					Hydric S	oil Present?	Yes	No <u></u> ×
Type:					Hydric So	oil Present?	Yes	No <u>×</u>
Type:					Hydric S	oil Present?	Yes	No ×
Type:					Hydric S	oil Present?	Yes	No X
Type: Depth (inc					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No <u></u>
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No ×
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X
Type:					Hydric S	oil Present?	Yes	No X

Project/Site: Cumberland	County Property	City/County: Cumb	perland County	Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; c/c				Sampling Point: DP-6
Investigator(s): Shannon D.	. Hill	Section Township R	ange: Tax Map #	Camping Form:
	c.): Floodplain	occilor, rownship, ro	nvex none).	Slope (%): 1-3%
	a Lat: 37.56124			
	t-Wateree complex/Poindexter-W			
•				·
•	ons on the site typical for this time o			
	, or Hydrology significal			'present? Yes X No
Are Vegetation, Soil	, or Hydrology naturally	problematic? (If r	needed, explain any answ	vers in Remarks.)
SUMMARY OF FINDING	GS – Attach site map showi	ng sampling point	locations, transect	s, important features, etc.
Hydrophytic Vegetation Prese	ent? Yes X No	Is the Sample	d Aroa	
Hydric Soil Present?	Yes X No	io ino oumpio		No
Wetland Hydrology Present?	Yes X No			
Remarks:				
Data point was taken n	ext to flag D-28.			
HYDROLOGY				
Wetland Hydrology Indicato	ors:		Secondary India	cators (minimum of two required)
Primary Indicators (minimum of	of one is required; check all that app	ly)	Surface So	il Cracks (B6)
Surface Water (A1)	True Aquati	c Plants (B14)		egetated Concave Surface (B8)
X High Water Table (A2)		ulfide Odor (C1)	X Drainage P	
Saturation (A3)		izospheres on Living Roo		
Water Marks (B1)		Reduced Iron (C4)		n Water Table (C2)
Sediment Deposits (B2)		Reduction in Tilled Soils		
Drift Deposits (B3)	Thin Muck S			Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Expla			Stressed Plants (D1)
Iron Deposits (B5)	` .	,	X Geomorphi	
Inundation Visible on Aeri	ial Imagery (B7)		Shallow Aq	
X Water-Stained Leaves (B				raphic Relief (D4)
Aquatic Fauna (B13)				al Test (D5)
Field Observations:			<u> </u>	()
Surface Water Present?	Yes No X Depth (inch	nes).		
Water Table Present?	Yes X No Depth (inch			
Saturation Present?	Yes No _X Depth (inch		etland Hydrology Prese	ent? Yes X No
(includes capillary fringe)	res No Deptil (inci	163)	eliana riyarology r rese	HO
Describe Recorded Data (stre	eam gauge, monitoring well, aerial ph	notos, previous inspection	ıs), if available:	
Remarks:				

/EGETATION (Five Strata) – Use scientific na	mes of p	plants.		Sampling Point: DP-6
· · · · · · · · · · · · · · · · · · ·	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liquidambar styraciflua	20%	YES	FAC	That Are OBL, FACW, or FAC: 6 (A)
2. Acer rubrum	20%	YES	FAC	
3. Prunus serotina	15%	YES	FACU	Total Number of Dominant Species Across All Strata: 7 (B)
···				Species Across All Strata (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 85% (A/B)
6				Prevalence Index worksheet:
	65%	= Total Cov	er	
50% of total cover: <u>32.5</u>	% 20% of	total cover	13%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	2070 01	total oover.		OBL species x 1 =
Carpinus caroliniana	20%	YES	FAC	FACW species x 2 =
• " •	5%	YES		FAC species x 3 =
2. Salix nigra	5%	150	OBL	FACU species x 4 =
3				UPL species x 5 =
4				
5				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
<u> </u>	25%	= Total Cov		Hydrophytic Vegetation Indicators:
40.5				
50% of total cover: <u>12.5</u>	<u>%</u> 20% of	total cover:	5%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				✓ 2 - Dominance Test is >50%
1. Polystichum acrostichoides	15%	YES	FAC	3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	15%	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover: <u>7.5%</u>	20% of	total cover:	3%	
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines,
				approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1				(7.5 only of larger in diameter at broast height (BBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cov	er	
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size: 20'x20')				
1. Smilax rotundifolia	5%	YES	FAC	
2				
3				
4				
5				Hydrophytic
	5%	= Total Cov	er	Vegetation
50% of total cover: 2.5%	6 20% of	total cover	1%	Present? Yes X No
		.o.ui oovei.	<u> </u>	
Remarks: (Include photo numbers here or on a separate si	neet.)			

Sampling Point: DP-6

SOIL

Profile Desc	ription: (Describe	to the dept	h needed to docun	nent the i	ndicator	or confirm	the absence of indicators.)
Depth	Matrix		Redox	k Features	3		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 3/3	100					Sandy Loam
4-18	10YR 6/1	90	7.5YR 5/8	10	C	PL	Sandy Loam
	10111071		7.0111070				
	-						
	-						
	-						
¹Type: C=Co	oncentration, D=Dep	etion RM=	Reduced Matrix, MS	=Masked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil		0.0011, 1.001	rtoadood matrix, me	-Maonoa	Cana Cit	AII 10.	Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(\$7)			2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		(S8) (M	II D A 1/17	
Black Hi	. , ,		Thin Dark Su				(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			-1, 140)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Mat	,	1 2)		(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S		·6)		Very Shallow Dark Surface (TF12)
	d Below Dark Surface	- (Δ11)	Depleted Dar	,	,		Other (Explain in Remarks)
	ark Surface (A12)	,,,,,	Redox Depre				
	lucky Mineral (S1) (L	.RR N.	Iron-Mangane			LRR N.	
	\ 147, 148)	,	MLRA 136		` / `	•	
	Bleyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)	³ Indicators of hydrophytic vegetation and
	ledox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent M				
Restrictive I	_ayer (if observed):						
Type:							
Depth (inc	ches):						Hydric Soil Present? Yes X No
Remarks:	, -						
. tomaino.							

Project/Site: Cumberland Coun	ty Property	City/County: (Cumberlan	nd County	Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; c/o Jan		, ,			Sampling Point: <u>DP-6, UPL</u>
Investigator(s): Hannah L. Miller,		Section, Towns	hip. Range:	Tax Map #44-A	
Landform (hillslope, terrace, etc.): Hil					
	Lat: 37.561				Datum:
Soil Map Unit Name: Poindexter We			-	NWI classific	
Are climatic / hydrologic conditions on		\ /		(If no, explain in F	
Are Vegetation, Soil, o	* *	•			present? Yes X No
Are Vegetation, Soil, o				explain any answe	
Are vegetation, Soil, o	Потриготодупациа	ily problematic?	(II rieeded,	, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS - A	Attach site map show	wing sampling p	oint locati	ions, transects	s, important features, etc.
Hydrophytic Vegetation Present?	Yes No_X	la tha C	ampled Area		
Hydric Soil Present?	Yes No_X	.00 0	ampled Area Wetland?	Yes	No <u>X</u>
Wetland Hydrology Present?	Yes No X				
Remarks:					
Data point was taken adjace	nt to flag D-28.				
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one i	s required: check all that a	nnly)		Surface Soil	
Surface Water (A1)		atic Plants (B14)			getated Concave Surface (B8)
High Water Table (A2)		Sulfide Odor (C1)		Drainage Pa	
Saturation (A3)	· -	Rhizospheres on Livir	na Roots (C3)		
Water Marks (B1)		of Reduced Iron (C4)	-		Water Table (C2)
Sediment Deposits (B2)		on Reduction in Tilled		Crayfish Bur	
Drift Deposits (B3)		k Surface (C7)	()	· ·	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		plain in Remarks)			stressed Plants (D1)
Iron Deposits (B5)					Position (D2)
Inundation Visible on Aerial Imag	gery (B7)			Shallow Aqu	
Water-Stained Leaves (B9)				Microtopogra	aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutra	Test (D5)
Field Observations:					
Surface Water Present? Yes _	No X Depth (in	nches):			
Water Table Present? Yes _	No X Depth (in	nches):			
Saturation Present? Yes _	No X Depth (in	nches):	Wetland	Hydrology Presei	nt? Yes No <u>X</u>
(includes capillary fringe)				- labla	
Describe Recorded Data (stream gau	ige, monitoring well, aerial	pnotos, previous insp	ections), if av	/allable:	
Remarks:					
1					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-6, UPL
001-001	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 20'x20'		Species?		Number of Dominant Species
1. Liriodendron tulipfera	25%	YES	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. <u>Liquidambar styraciflua</u>	20%	YES	FAC	Total Number of Dominant
3. <u>Diospyros virginiana</u>	10%	NO	FAC	Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 40% (A/B)
6				Prevalence Index worksheet:
	55%	= Total Cove	er	
50% of total cover: 27.5	<u>%</u> 20% of	total cover:	11%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20'				OBL species $0 \times 1 = 0$
1. Pinus taeda	20%	YES	FAC	FACW species 0 $x = 0$
2. Fagus grandifolia	10%	YES	FACU	FACUL species 50 x 3 = 150 FACUL species 50 x 4 = 200
3				17100 species x + =
4				UPL species 0 $x = 0$
5				Column Totals:(A)
6.				Prevalence Index = B/A = 3.50
	30%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover: _ 15%				1 - Rapid Test for Hydrophytic Vegetation
	<u>20%</u> 01	total cover:	070	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				3 - Prevalence Index is ≤3.0¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5		· 		¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	15%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3		· 		approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10		·		
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
50% of total cover: 7.5%				
Woody Vine Stratum (Plot size: 20'x20')	2070 01	total oover.	070	
1				
2				
3				
5				Hydrophytic
		= Total Cove		Vegetation Present? Yes No_ X
50% of total cover:	20% of	total cover:		100 NO
Remarks: (Include photo numbers here or on a separate sl	heet.)			

Sampling Point: DP-6, UPL

Depth	Matrix		Redox Features	2 Demande
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc	
0-4	10YR 5/3	100		Sandy Loam
4-18	10YR 6/4	100		Sandy Loam
				
				
		pletion, RM=R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
dric Soil	Indicators:			Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA	
_ Black Hi			Thin Dark Surface (S9) (MLRA 147, 14	
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	d Layers (A5) ick (A10) (LRR N)		Depleted Matrix (F3)Redox Dark Surface (F6)	(MLRA 136, 147) Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	ark Surface (A12)	00 (/ (1 1)	Redox Depressions (F8)	Outer (Explain in remaine)
	lucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR N	N,
	\ 147, 148)		MLRA 136)	
_ Sandy G	Bleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122	³ Indicators of hydrophytic vegetation and
	tedox (S5)		Piedmont Floodplain Soils (F19) (MLR	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127	(, 147) unless disturbed or problematic.
estrictive I	_ayer (if observed):		
Type:			<u> </u>	
Depth (inc	ches):		_	Hydric Soil Present? Yes No _X
emarks:				·

Project/Site: Cumberland	County Prope	erty _{Cit}	v/County: Cumberla	nd County	Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; of	c/o James H. Martin				Sampling Point: DP-7
Investigator(s): Shannon D		Se	ction Township Range		
• · · · <u> </u>					Slope (%):1-3%
					Datum:
Soil Map Unit Name: Water		Lat		NWI classifi	
Are climatic / hydrologic condit		minal fan Hein Hann afau			
· · · · ·		· · · · · · · · · · · · · · · · · · ·			present? Yes X No
Are Vegetation, Soil	-				
Are Vegetation, Soil	, or Hydrolog	y naturally proble	ematic? (If needed	l, explain any answ	ers in Remarks.)
SUMMARY OF FINDIN	GS – Attach s	ite map showing s	ampling point locat	tions, transect	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes	X No	Is the Sampled Area	a	
Hydric Soil Present?		X No	within a Wetland?	$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	Yes _	X No			
Remarks:					
Data point was taken	next to flag D-8	4.			
HYDROLOGY					
Wetland Hydrology Indicat	ore:			Secondary India	ators (minimum of two required)
		: chack all that apply)			
Primary Indicators (minimum	or one is required.		(D4.4)		l Cracks (B6)
Surface Water (A1)		True Aquatic Plant			egetated Concave Surface (B8)
		Hydrogen Sulfide		∑ Drainage Pa	
Saturation (A3)			neres on Living Roots (C3		
Water Marks (B1)		Presence of Redu			Water Table (C2)
Sediment Deposits (B2)			ction in Tilled Soils (C6)	Crayfish Bu	
Drift Deposits (B3)		Thin Muck Surface			/isible on Aerial Imagery (C9) Stressed Plants (D1)
Algal Mat or Crust (B4)		Other (Explain in F	Remarks)	Stunted or S X Geomorphic	
Iron Deposits (B5) Inundation Visible on Ae	rial Imagary (P7)			Shallow Aqu	
X Water-Stained Leaves (E					raphic Relief (D4)
Aquatic Fauna (B13)	59)			FAC-Neutra	
			1	FAC-Neutra	ii resi (D3)
Field Observations:	Mar. Na	Y Don'th Cook on			
Surface Water Present?		Depth (inches): _			
Water Table Present?	·	Depth (inches): _			×
Saturation Present? (includes capillary fringe)	Yes No	X_ Depth (inches): _	Wetland	d Hydrology Prese	nt? Yes X No
Describe Recorded Data (str	eam gauge, monito	oring well, aerial photos,	previous inspections), if a	vailable:	
Remarks:	_				
Remarks.					

/EGETATION (Five Strata) – Use scientific na	mes of	olants.		Sampling Point: DP-7
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species _
1. Acer rubrum	20%	YES	FAC	That Are OBL, FACW, or FAC: (A)
2. Platanus occidentalis	20%	YES	FACW	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)
6.				That Are OBL, FACW, OF FAC.
<u>. </u>	40%	= Total Cove		Prevalence Index worksheet:
200/				Total % Cover of: Multiply by:
50% of total cover: 20%	20% of	total cover:	070	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20'	/			FACW species x 2 =
1. Carpinus caroliniana	20%	YES	FAC	FAC species x 3 =
2. Liquidambar styraciflua	20%	YES	FAC	FACU species x 4 =
3				
4				UPL species x 5 =
5				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
o	40%	= Total Cove		Hydrophytic Vegetation Indicators:
000/				
50% of total cover: <u>20%</u>	20% of	total cover:	8%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
0		Total Cove		be present, unless disturbed or problematic.
		= Total Cove	2 1	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Polystichum acrostichoides	10%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
				Hank All banks as a configuration of the first of the fir
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Trocay time 7 in weekly times, regardless of meight
	10%	= Total Cove	er	
50% of total cover: 5%	20% of	total cover:	2%	
Woody Vine Stratum (Plot size: 20'x20')	_	-		
1. Smilax rotundifolia	10%	YES	FAC	
"				
3				
4				
5			-	Hydrophytic
	10%	= Total Cove	er	Vegetation
50% of total cover:5%	20% of	total cover:	2%	Present? Yes X No
Remarks: (Include photo numbers here or on a separate sl	neet.)			

SOIL Sampling Point: DP-7

Profile Desc	ription: (Describe	to the dep	th needed to docur	ment the i	indicator	or confirm	n the absence of indicators.)		
Depth	Matrix		Redo	x Feature	S1	. 2			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks		
0-5	10YR 3/3	100					Sandy Loam		
5-18	10YR 6/2	85	7.5YR 5/6	15	C	PL_	Sandy Loam		
									
							<u> </u>		
		oletion, RM	=Reduced Matrix, M	S=Masked	d Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil							Indicators for Problematic Hydric Soils ³ :		
Histosol			Dark Surface		(CO) (I	U DA 447	2 cm Muck (A10) (MLRA 147)		
Black Hi	pipedon (A2)		Polyvalue Be Thin Dark Su		. , .		, 148) Coast Prairie Redox (A16) (MLRA 147, 148)		
	n Sulfide (A4)		Loamy Gleye			47, 140)	Piedmont Floodplain Soils (F19)		
	Layers (A5)		X Depleted Ma		/		(MLRA 136, 147)		
	ick (A10) (LRR N)		Redox Dark		- 6)		Very Shallow Dark Surface (TF12)		
Depleted	Below Dark Surfac	e (A11)	Depleted Da	rk Surface	(F7)		Other (Explain in Remarks)		
	ark Surface (A12)		Redox Depre						
	lucky Mineral (S1) (I	LRR N,	Iron-Mangan		es (F12) (LRR N,			
	147, 148)		MLRA 13				3		
	Sleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be preser						
	edox (S5)								
	Matrix (S6) _ayer (if observed)		Red Parent N	viateriai (F	(WLR	A 127, 147	7) unless disturbed or problematic.		
	-ayer (ii observeu)	•							
Type:	- L X						Hadda Oall Barranto Van X		
Depth (inc	ches):						Hydric Soil Present? Yes X No		
Remarks:									

Project/Site: Cumberland	County Property	City/C	County: Cumberlan	nd County	Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC;			,		Sampling Point: DP-7, UPL
Investigator(s): Hannah L. N		vin Section	on Township Range		
					Slope (%): 2-4%
Subregion (LRR or MLRA): n/a	•				
Soil Map Unit Name: Watered			Long		cation: UPL
Are climatic / hydrologic condition		or this time of year?	/oo X No	(If no, explain in F	
					present? Yes X No
Are Vegetation, Soil					
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (if needed,	, explain any answe	ers in Remarks.)
SUMMARY OF FINDING	S – Attach site m	nap showing san	npling point locati	ions, transects	s, important features, etc.
Hydrophytic Vegetation Prese	nt? Yes	NoX	lo the Compled Area		
Hydric Soil Present?		No X	Is the Sampled Area within a Wetland?		No <u> </u>
Wetland Hydrology Present?	Yes	No X			<u> </u>
Remarks:		<u> </u>			
Data point was taken a	djacent to flag D-84				
HYDROLOGY					
Wetland Hydrology Indicato	rs:			Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum o	of one is required; checl	k all that apply)		Surface Soi	Cracks (B6)
Surface Water (A1)		True Aquatic Plants ((B14)	Sparsely Ve	egetated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Od	lor (C1)	Drainage Pa	atterns (B10)
Saturation (A3)		· -	es on Living Roots (C3)	=	
Water Marks (B1)		Presence of Reduced			Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Bu	
Drift Deposits (B3)		Thin Muck Surface (0		-	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Rer			Stressed Plants (D1)
Iron Deposits (B5)		` .	,		Position (D2)
Inundation Visible on Aeri	al Imagery (B7)			Shallow Aqu	
Water-Stained Leaves (B9	9)				aphic Relief (D4)
Aquatic Fauna (B13)	,			FAC-Neutra	
Field Observations:					
Surface Water Present?	Yes NoX	Depth (inches):			
Water Table Present?	Yes No _X				
Saturation Present?	Yes No _X			Hydrology Prese	nt? Yes No X
(includes capillary fringe)	10010			Trydrology 1 1ese	165 <u></u> 116 <u></u>
Describe Recorded Data (stre	am gauge, monitoring v	vell, aerial photos, pre	evious inspections), if av	vailable:	
Remarks:	-				

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-7, UPL
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?	Status	Number of Dominant Species
1. Liriodendron tulipfera	30%	YES	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. Pinus taeda	25%	YES	FAC	Total Number of Densire of
3				Total Number of Dominant Species Across All Strata: 5 (B)
4				Openies / toross / tir etrata.
				Percent of Dominant Species
5	-			That Are OBL, FACW, or FAC: 40% (A/B)
6				Prevalence Index worksheet:
	55%	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover:27.5	<u>%</u> 20% of	total cover:	11%	
Sapling Stratum (Plot size: 20'x20'				OBL species $0 \times 1 = 0$
1. Juniperus virginiana	20%	YES	FACU	FACW species <u>0</u> x 2 = <u>0</u>
	·	YES		FAC species <u>35</u> x 3 = <u>105</u>
				FACU species <u>65</u> x 4 = <u>260</u>
3		. ———		UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 365 (B)
5				
6				Prevalence Index = B/A = 3.65
	30%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 15%				1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	2070 01	total cover.		2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				Problematic Hydrophytic Vegetation (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
		= Total Cov		be present, unless disturbed or problematic.
	·			Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:	<u> </u>	Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Polystichum acrostichoides	15%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
A				than 3 in. (7.6 cm) DBH.
T	-			Charle Mandy plants avaluating woody vines
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximately a to 20 ft (1 to a m) in noight.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				()
11.				Woody vine – All woody vines, regardless of height.
	·	= Total Cov	or	
50% of total cover: <u>7.5%</u>	20% of	total cover:	3%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
5				Hydrophytic
		= Total Cov	er	Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No_X
Remarks: (Include photo numbers here or on a separate sl				1
A STATE AND A STATE OF THE STAT	/			

Sampling Point: DP-7, UPL

SOIL

Profile Desc	ription: (Describe	to the depth	needed to docum	ent the in	dicator o	or confirm	n the absence of indicators.)
Depth	Matrix		Redox	Features			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 4/3	100					Sandy Loam_
4-14	10YR 5/4	100					Sandy Loam
14-18	10YR 6/6	100					Sandy Loam
		·					
		·					
		·					
	-						
¹Type: C=Co	oncentration, D=Dep	letion, RM=F	Reduced Matrix, MS	=Masked	Sand Gra	ins.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I							Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				
Black Hi			Thin Dark Su			47, 148)	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		2)		Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat		• \		(MLRA 136, 147)
	ick (A10) (LRR N) d Below Dark Surfac	Δ (Δ11)	Redox Dark S Depleted Dar				Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	C (A11)	Redox Depre				Other (Explain in Remarks)
	lucky Mineral (S1) (L	RR N,	Iron-Mangane			.RR N,	
	\ 147, 148)	,	MLRA 136		· , ·	,	
Sandy G	lleyed Matrix (S4)		Umbric Surfa	ce (F13) (N	/ILRA 130	6, 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent M	laterial (F2	1) (MLR	127, 147	7) unless disturbed or problematic.
Restrictive L	_ayer (if observed):						
Type:							
Depth (inc	ches):		_				Hydric Soil Present? Yes No _X
Remarks:							

Project/Site: Cumberland	County Property	y Citv/C	county: Cumberlar	nd County	Sampling Date: 4/2/2018	
Applicant/Owner: CWV, LLC; o	:/o James H. Martin				Sampling Point: DP-8	
Investigator(s): Shannon D		Section	on, Township, Range:			
• ()					Slope (%):0-2%	
					Datum:	
Soil Map Unit Name: Water			25fig			
Are climatic / hydrologic condit		al for this time of year? V		(If no, explain in F		
Are Vegetation, Soil			hed? Are "Norm		present? Yes X No	
Are Vegetation, Soil				, explain any answ		
Are vegetation, 50ii	, or riyurology _	naturally problems	alic: (Il fleeded)	, explain any answe	515 III Nemarks.)	
SUMMARY OF FINDIN	GS – Attach site	map showing sam	pling point locat	ions, transects	s, important features, etc.	
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area	•		
Hydric Soil Present?	Yes X		within a Wetland?	$_{Yes}$ $ imes$	No	
Wetland Hydrology Present?		,			_	
Remarks:	<u> </u>					
Data naint was taken						
Data point was taken i	next to flag D-121					
HYDROLOGY						
Wetland Hydrology Indicate	ors:			Secondary Indic	ators (minimum of two required)	
Primary Indicators (minimum		neck all that annly)		· ·		
Surface Water (A1)		True Aquatic Plants (D14)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)		
Surface Water (A1)X High Water Table (A2)		Hydrogen Sulfide Od		Sparsely vegetated concave Surface (B6) Drainage Patterns (B10)		
Saturation (A3)		Nydrogen Sunde Od Oxidized Rhizosphere				
Water Marks (B1)		Presence of Reduced	= : :		Water Table (C2)	
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Bu		
Drift Deposits (B3)		Thin Muck Surface (0		-	/isible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Other (Explain in Rer			Stressed Plants (D1)	
Iron Deposits (B5)	-	Outor (Explain in Nor	namoj	X Geomorphic		
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqu		
X Water-Stained Leaves (E					raphic Relief (D4)	
Aquatic Fauna (B13)	20)			FAC-Neutra		
Field Observations:				1710 1104114	1 1001 (20)	
Surface Water Present?	Voc. No.	X Depth (inches):				
		Depth (inches): 4"				
Water Table Present?					Y	
Saturation Present? (includes capillary fringe)	Yes No	Market Depth (inches):	Wetland	Hydrology Prese	nt? Yes X No	
Describe Recorded Data (str	eam gauge, monitorir	ng well, aerial photos, pre	vious inspections), if av	vailable:		
					· ·	
Remarks:						

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-8
201-201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Carpinus caroliniana	20%	YES	<u>FAC</u>	That Are OBL, FACW, or FAC: 6 (A)
2. Acer rubrum	15%	YES	FAC	Total Number of Dominant
3. Platanus occidentalis	15%	YES	FACW	Species Across All Strata: 6 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
6.				That Are OBE, FACW, OF FAC.
<u>. </u>		= Total Cove		Prevalence Index worksheet:
250/				Total % Cover of: Multiply by:
50% of total cover: 25%	20% of	total cover:	10%	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')				FACW species x 2 =
1. Acer rubrum	20%	YES	FAC	FAC species x 3 =
2. Liquidambar styraciflua	15%	YES	FAC	FACU species x 4 =
3				
4				UPL species x 5 =
5				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
0	35%	= Total Cove		
				Hydrophytic Vegetation Indicators:
50% of total cover: <u>17.5</u> °	<u>%</u> 20% of	total cover:	7%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	15%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
,				than 3 in. (7.6 cm) DBH.
4				Shrub Woody planta avaluding woody vince
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Managhardan Allamanhardan managhar af balah t
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
50% of total cover: _7.5%				
	<u></u> 20% or	total cover:		
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5.				
		= Total Cove		Hydrophytic
				Vegetation
50% of total cover:	20% of	total cover:		100
Remarks: (Include photo numbers here or on a separate sl	heet.)			

Sampling Point: DP-8

Depth	Matrix	-	Redox	x Features			n the absence of indicators.)
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture Remarks
0-3	10YR 4/2	100					Sandy Loam
3-18	10YR 6/1	90	7.5YR 5/8	_10	С	PL_	Sandy Loam
							
1- 0.0							21
Hydric Soil		pletion, RM	=Reduced Matrix, MS	3=Masked S	Sand Gra	iins.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
-			Dork Surface	(07)			
Histosol	pipedon (A2)		Dark Surface Polyvalue Be		- (S8) (M	Ι R Δ 147	2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
	istic (A3)		Thin Dark Su				(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			,,	Piedmont Floodplain Soils (F19)
	d Layers (A5)		X Depleted Mat	,	,		(MLRA 136, 147)
2 cm Mu	uck (A10) (LRR N)		Redox Dark S	Surface (F6	5)		Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)	Depleted Dar				Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre				
	Mucky Mineral (S1)	LRR N,	Iron-Mangane		s (F12) (l	RR N,	
	A 147, 148)		MLRA 130	•	41 D A 40	0 400\	31 - Parton of books about the control of
	Gleyed Matrix (S4)		Umbric Surfa				³ Indicators of hydrophytic vegetation and
	Redox (S5) I Matrix (S6)		Piedmont Flo Red Parent M				
	Layer (if observed)	١-	Ned Falentin	iateriai (FZ	1) (IVILIX)	1 121, 141	unless distribed of problematic.
Type:		,-					
	ches):						Hydric Soil Present? Yes X No
Remarks:	<u> </u>						11, unio con 11000nti 1100 110
Nemarks.							

SOIL

Project/Site: Cumberland County	/ Property	City/County:	Cumberlar	nd County	Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; c/o Jam	es H. Martin			State: VA	Sampling Point: DP-8, UPL
Investigator(s): Shannon D. Hill		Section, Towns	ship, Range:	Tax Map #44-A	
Landform (hillslope, terrace, etc.): Hills	lope	Local relief (conca	ive, convex, n	one):	Slope (%): 1-3%
Subregion (LRR or MLRA): n/a					
Soil Map Unit Name: Wateree sandy					cation: UPL
Are climatic / hydrologic conditions on the		ne of year? Yes X	No	 (If no, explain in F	
Are Vegetation, Soil, or I					present? Yes X No
Are Vegetation, Soil, or I				, explain any answe	
,	, a a a g, <u></u> and	,,,	(, . , ,	,
SUMMARY OF FINDINGS - A	ttach site map sho	owing sampling p	ooint locat	ions, transects	s, important features, etc.
Lhydrophytic Vagetation Procent?	Yes No_>	_			
Hydrio Soil Broomt?	Yes No_2		ampled Area Wetland?	Vos	No <u>X</u>
Hydric Soil Present? Wetland Hydrology Present?	Yes No _>	× within s	a wellanu:	163	
Remarks:	163100_/				
Data point was taken adjacent	to flag D-121.				
HYDROLOGY					
Wetland Hydrology Indicators:					ators (minimum of two required)
Primary Indicators (minimum of one is	-			Surface Soil	
Surface Water (A1)		uatic Plants (B14)			getated Concave Surface (B8)
High Water Table (A2)		en Sulfide Odor (C1)		Drainage Pa	
Saturation (A3)		d Rhizospheres on Livi			
Water Marks (B1)		ce of Reduced Iron (C4			Water Table (C2)
Sediment Deposits (B2)		Iron Reduction in Tilled	d Soils (C6)	Crayfish Bur	
Drift Deposits (B3)		ick Surface (C7)			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (E	Explain in Remarks)			Stressed Plants (D1)
Iron Deposits (B5)					Position (D2)
Inundation Visible on Aerial Image	ry (B7)			Shallow Aqu	
Water-Stained Leaves (B9)					aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutra	Test (D5)
Field Observations:	· · · · · ·				
	No X Depth (
	No X_ Depth (
Saturation Present? Yes	No X Depth ((inches):	Wetland	Hydrology Presei	nt? Yes No X
(includes capillary fringe) Describe Recorded Data (stream gauge	e, monitoring well, aeria	al photos, previous ins	pections), if av	vailable:	
, , ,	, , , , , , , , , , , , , , , , , , , ,	, ,,	,,		
Remarks:					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-8, UPL
001-001	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 20'x20'		Species?		Number of Dominant Species
1. Liriodendron tulipfera	30%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Pinus taeda	30%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 25% (A/B)
6				
	60%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: _ 30%	20% of	total cover:	12%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20'	<u></u>	-		OBL species $0 \times 1 = 0$
1. Fagus grandifolia	20%	YES	FACU	FACW species 0 x 2 = 0
2				FAC species 30 x 3 = 90
3				FACU species x 4 = 280
4				UPL species 0 x 5 = 0
5				Column Totals: <u>100</u> (A) <u>370</u> (B)
6.				Prevalence Index = B/A = 3.70
0	20%	= Total Cove		Hydrophytic Vegetation Indicators:
400/				
50% of total cover: 10%	20% of	total cover:	4%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				1 Toblematic Hydrophytic Vegetation (Explain)
5				¹ Indicators of hydric soil and watland hydrology must
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')		-		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1. Polystichum acrostichoides	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Continue Washington and discount discount
3				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
				than 3 in. (7.6 cm) DBH.
4				Shrub – Woody plants, excluding woody vines,
5				approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				, , ,
	20%	= Total Cove	er	
50% of total cover: 10%	20% of	total cover:	4%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4.				
5				
		= Total Cove		Hydrophytic Vegetation
F00/ -{\cdot\cdot\cdot\cdot\cdot\cdot\cdot\cdot				Present? Yes No X
50% of total cover:		iotal cover:		
Remarks: (Include photo numbers here or on a separate sl	neet.)			

Sampling Point: DP-8, UPL

SOIL

(!	Matrix	%	Redox Features	1 Loc ²	T		D	_
(inches) 0-6	Color (moist)	100	Color (moist) % Type	LOC	Texture		Remark	S
	10YR 4/3				Sandy Lo	<u> </u>		
6-14	10YR 6/4	100			Sandy Loa	<u> </u>		
14-18	10YR 6/6	100			Sandy Loa	<u> </u>		
	-				-			
	-							
	-							
vpe: C=Cc	oncentration, D=De	pletion, RM=	Reduced Matrix, MS=Masked Sand	Grains.	² Location:	PL=Pore Lin	ing, M=Matri	ix.
	ndicators:	,						Hydric Soils ³ :
_ Histosol	(A1)		Dark Surface (S7)			2 cm Muck (A10) (MLR<i>A</i>	\ 147)
_ Histic Ep	pipedon (A2)		Polyvalue Below Surface (S8)		148)	Coast Prairie	e Redox (A1	6)
_ Black His			Thin Dark Surface (S9) (MLR	A 147, 148)		(MLRA 14		
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)		_	Piedmont FI		ils (F19)
	l Layers (A5) ick (A10) (LRR N)		Depleted Matrix (F3) Redox Dark Surface (F6)			(MLRA 13 Very Shallov		oo (TE12)
	d Below Dark Surfac	ce (A11)	Depleted Dark Surface (F7)		_	Other (Expla		, ,
	ark Surface (A12)	55 (7111)	Redox Depressions (F8)			_ 011101 (2,1010	an in reoma	1.0)
	lucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N,				
MLRA	A 147, 148)		MLRA 136)					
-	lleyed Matrix (S4)		Umbric Surface (F13) (MLRA			Indicators of h		-
-	edox (S5)		Piedmont Floodplain Soils (F1			wetland hydro		
	Matrix (S6)		Red Parent Material (F21) (MI	_RA 127, 147	7)	unless disturb	ed or proble	ematic.
	//C - L //							
	_ayer (if observed)):						
Туре:):					.,	🗴
Type:):	<u> </u>		Hydric S	ioil Present?	Yes	No <u>×</u>
Type:):	<u></u>		Hydric S	ioil Present?	Yes	No_X
Type:):	<u> </u>		Hydric S	Soil Present?	Yes	No <u>×</u>
Type:):	<u></u>		Hydric S	Soil Present?	Yes	No <u>×</u>
Type:):			Hydric S	Soil Present?	Yes	No_ <u>×</u>
Type:):			Hydric S	Soil Present?	Yes	No ×
Type:):	<u> </u>		Hydric S	Soil Present?	Yes	No X
Type: Depth (inc):			Hydric S	Soil Present?	Yes	No_ <u></u> X
Type: Depth (inc):			Hydric S	Soil Present?	Yes	No X
Type: Depth (inc					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type: Depth (inc					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Туре:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X
Type:					Hydric S	Soil Present?	Yes	No X

Project/Site: Cumberland	County Property	_ City/County: Cumberlar	nd County S	ampling Date: 4/5/2018
Applicant/Owner: CWV, LLC; of	c/o James H. Martin			Sampling Point: DP-9
Investigator(s): Shannon D). Hill	_ Section, Township, Range:	Tax Map #	Camping Form.
	tc.): Floodplain [ocal relief (concave, convex r	ione).	Slone (%): 2-4%
	1/a Lat: 37.5700			Slope (%) 1 ://
Soil Map Unit Name: Poinde		Long	NWI classificati	
		- Y Y		
•	tions on the site typical for this time of			
	, or Hydrology significant			sent? Yes X No
Are Vegetation, Soil	, or Hydrology naturally p	oroblematic? (If needed	, explain any answers	in Remarks.)
SUMMARY OF FINDIN	GS – Attach site map showir	ng sampling point locat	ions, transects, i	mportant features, etc.
Hydrophytic Vegetation Pres	ent? Yes X No	Is the Sampled Area		
Hydric Soil Present?	Yes X No	io ino oumpiou / noc	Yes_X	No
Wetland Hydrology Present?				
Remarks:				
Data point was taken i	next to flag E-389.			
HYDROLOGY				
Wetland Hydrology Indicate	ors:		Secondary Indicator	rs (minimum of two required)
Primary Indicators (minimum	of one is required; check all that apply	/)	Surface Soil Cra	
Surface Water (A1)	True Aquatic	Plants (B14)	· · · · · · · · · · · · · · · · · · ·	ated Concave Surface (B8)
X High Water Table (A2)		ılfide Odor (C1)	X Drainage Patter	
X Saturation (A3)		zospheres on Living Roots (C3		
Water Marks (B1)		Reduced Iron (C4)	Dry-Season Wa	
Sediment Deposits (B2)		Reduction in Tilled Soils (C6)	Crayfish Burrow	
Drift Deposits (B3)	Thin Muck St			ole on Aerial Imagery (C9)
Algal Mat or Crust (B4)		in in Remarks)		ssed Plants (D1)
X Iron Deposits (B5)	` ' '	,	X Geomorphic Po	
Inundation Visible on Ae	rial Imagery (B7)		Shallow Aquitar	
X Water-Stained Leaves (E	• , ,		Microtopograph	
Aquatic Fauna (B13)			FAC-Neutral Te	
Field Observations:				(20)
Surface Water Present?	Yes No X Depth (inche	es):		
Water Table Present?	Yes X No Depth (inche			
Saturation Present?	Yes No _X Depth (inche		I Hydrology Present?	Yes X No
(includes capillary fringe)	res No Deptil (iliche	vvetiant	i nyurology Fresent:	165 / NO
Describe Recorded Data (str	eam gauge, monitoring well, aerial pho	otos, previous inspections), if a	vailable:	
Remarks:				

Total Number of Dominant Species Cross All Strates 5 (B) Species Across All Strates 5 (B) Species Across All Strates 5 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) Sapiling Stratum (Plot size: 20/x20") 1. Liquidambar styracifflua 20% YES FAC 2. Acer rubrum 15% YES FAC 3.	/EGETATION (Five Strata) – Use scientific na	mes of	olants.		Sampling Point: DP-9
1. Getpinus caroliniana		Absolute	Dominant	Indicator	-
	Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species
Total Number of Dominant 5	1. Carpinus caroliniana	25%	YES	FAC	
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	2. Betula nigra	25%	YES	FAC	Total Number of Descious
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (VB)	3.				F
Solition Solition					Species / toross / til ottata.
Solid Soli					
Solition Solition					That Are OBL, FACW, or FAC: 100 76 (A/B)
Soling Stratum (Plot size: 20'x20' 20% of total cover 10% 20% of total cover 3% 20% of total cov	6	F00/			Prevalence Index worksheet:
Saping Stratum (Plot size: 207207 29% of total cover. 10% 20% VES FAC FAC		50%	= Total Cove	er	
Sapling Stratum (Plot size: 20 x20 20% YES FAC 15% 15% YES FAC 15% 15% YES FAC 15%	50% of total cover: <u>25</u> %	20% of	total cover:	10%	
Liquidambar styraciflua 20% YES FAC FAC	Sapling Stratum (Plot size: 20'x20')				
Acer rubrum 15% YES FAC Acer rubrum 15% YES FAC Acer rubrum 144	1 Liquidambar styraciflua	20%	YES	FAC	
FACU species		15%	YES	FAC	FAC species x 3 =
UPL species	2		-		FACU species x 4 =
5.6	3				UPL species x 5 =
Prevalence Index = B/A = Prevalence Index =					Column Totals: (A) (B)
Shrub Stratum (Plot size: 20'x20' 17.5% 20% of total cover: 7% 1. -	5				
Shrub Stratum (Plot size: 20'x20'	6	-			Prevalence Index = B/A =
Shrub Stratum (Plot size: 20'x20'		35%	= Total Cove	er	Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 20'x20'	50% of total agyar: 17.5				
1		<u>70</u> 20% 01	total cover.	1 /0	1 - , · · · · · · · · ·
2					_
data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Performental Cover					
	2				
4	3				. ,
5					Problematic Hydrophytic Vegetation (Explain)
Total Cover					
Definitions of Five Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine - All woody vines, regardless of height. Woody vine - All woody vines, regardless of height. Hydrophytic Vegetation Present? Yes X No					
So% of total cover:	o		Total Cove		
Herb Stratum (Plot size: 20'x20' 15% YES FACW			= Total Cove	2 I	Definitions of Five Vegetation Strata:
Herb Stratum (Plot size: 20X20" 15% YES FACW 20 15% YES FACW 3 15% YES FACW 7.6 cm) or larger in diameter at breast height (DBH). 3 3 3 3 3 3 3 3 3		20% of	total cover:		Tree – Woody plants, excluding woody vines
1. Juncus effusus 15% YES FACW 2. Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Hydrophytic Vegetation Present? Yes X No	Herb Stratum (Plot size: 20'x20')				
Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.		15%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height. 15% = Total Cover 50% of total cover: 7.5% 20% of total cover: 3% Woody Vine Stratum (Plot size: 20'x20') 1. 2. 3. 4. 5. — = Total Cover 50% of total cover: 20% of total cover: Yes X No Present? Yes X No Present?					Sanling Woody plants, excluding woody vines
than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height. 15% = Total Cover					
approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Hough vine – All woody vines, regardless of height. Hough vine – All woody vines, regardless of height. Hydrophytic vegetation Present? Yes X No Present?	٥				
approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, regardless of height. Woody vine – All woody vines, regardless of height. Hough vine – All woody vines, regardless of height. Hough vine – All woody vines, regardless of height. Hydrophytic vegetation Present? Yes X No Present?	4				a.
Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. 10.					
8	6				approximately 3 to 20 ft (1 to 6 ff) in height.
Description Plants, except woody vines, less than approximately 3 ft (1 m) in height.	7				Herb – All herbaceous (non-woody) plants, including
9	8				-
10					
11					it (1 m) in neight.
15% = Total Cover 3% 20% of total cover: 3% 20 vices 3% 20 vices 20 vice					Woody vine – All woody vines, regardless of height.
50% of total cover: 7.5% 20% of total cover: 3% Woody Vine Stratum (Plot size: 20'x20') 1.	11				
Woody Vine Stratum (Plot size: 20'x20')					
Woody Vine Stratum (Plot size: 20'x20')	50% of total cover: 7.5%	20% of	total cover:	3%	
1					
2					
3					
4					
5 = Total Cover	3				
Total Cover Solve of total cover: 20% of total cover: Present? Yes X No	4				
Total Cover Solve of total cover: 20% of total cover: Present? Yes X No					
50% of total cover: 20% of total cover: Present? Yes No					1 7 7
50% of total cover: 20% of total cover:					Present? Yes X No
Remarks: (Include photo numbers here or on a separate sheet.)	50% of total cover:	20% of	total cover:		100
	Remarks: (Include photo numbers here or on a separate s	heet.)			

SOIL Sampling Point: DP-9

Profile Desc	ription: (Describe	to the dept	th needed to docun	nent the i	ndicator	or confirm	the absence of indicators.)
Depth	Matrix		Redo	x Features	s		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 4/2	100			-		Sandy Loam
4-18	10YR 6/1	90	7.5YR 5/6	10	С	PL	Sandy Loam
					-		
	-						
		·		·	·		
					-		
		· 			-		
1- 0.0							21
Hydric Soil	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	s=Masked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
_			D 10 ((07)			•
Histosol			Dark Surface		(CO) (N	U D A 447	2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be				
Black Hi	en Sulfide (A4)		Thin Dark Su Loamy Gleye			47, 140)	(MLRA 147, 148) Piedmont Floodplain Soils (F19)
	d Layers (A5)		Z Depleted Mat	,	r2)		(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S	. ,	·6)		Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)
	ark Surface (A12)	- (Redox Depre				
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			LRR N,	
MLRA	\ 147, 148)		MLRA 13	6)			
	Bleyed Matrix (S4)		Umbric Surfa				³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	y) unless disturbed or problematic.
Restrictive I	Layer (if observed):						
Type:							
Depth (in	ches):		<u> </u>				Hydric Soil Present? Yes X No No
Remarks:							

Project/Site: Cumberland Cour	ity Property	City/County: Cumb	erland County	_ Sampling Date: 4/2/2018
Applicant/Owner: CWV, LLC; c/o Ja		_ , , ,		Sampling Point: <u>DP-9, UPL</u>
Investigator(s): Hannah L. Miller,		Section, Township, Ra	nge: Tax Map #45-	4 -1
Landform (hillslope, terrace, etc.): Hi				
Subregion (LRR or MLRA): n/a				
Soil Map Unit Name: Poindexter-W			NWI classif	
Are climatic / hydrologic conditions on			(If no, explain in	
Are Vegetation, Soil, c				present? Yes X No
Are Vegetation, Soil, c			eeded, explain any answ	
, con, con,	Triydrologynaturally	problematio: (ii ii	zodou, explain any anow	ord in recinarios.
SUMMARY OF FINDINGS -	Attach site map showing	ng sampling point	ocations, transect	s, important features, etc.
Hydrophytic Vegetation Present?	Yes No_X			
Hydric Soil Present?	Yes No_X	— Is the Sampled within a Wetla	ı Area nd? Yes	No <u>X</u>
Wetland Hydrology Present?	Yes No X	_		<u> </u>
Remarks:				
	5 =			
Data point was taken adjace	nt to flag E-389.			
HYDROLOGY			_	
Wetland Hydrology Indicators:			Secondary Indic	cators (minimum of two required)
Primary Indicators (minimum of one	is required: check all that appl	v)	Surface Soi	
Surface Water (A1)	True Aquatio			egetated Concave Surface (B8)
High Water Table (A2)		ulfide Odor (C1)		atterns (B10)
Saturation (A3)	· -	izospheres on Living Roo		
Water Marks (B1)		Reduced Iron (C4)		Water Table (C2)
Sediment Deposits (B2)		Reduction in Tilled Soils (
Drift Deposits (B3)	Thin Muck S	urface (C7)	Saturation \	Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Expla	in in Remarks)	Stunted or S	Stressed Plants (D1)
Iron Deposits (B5)			Geomorphic	c Position (D2)
Inundation Visible on Aerial Image	gery (B7)		Shallow Aq	uitard (D3)
Water-Stained Leaves (B9)				raphic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutra	al Test (D5)
Field Observations:				
	No X Depth (inch			
	No X Depth (inch	-		
Saturation Present? Yes (includes capillary fringe)	No X Depth (inch	es): W	etland Hydrology Prese	ent? Yes NoX_
Describe Recorded Data (stream ga	uge, monitoring well, aerial ph	otos, previous inspections	s), if available:	
, ,		71	,,	
Remarks:				

/EGETATION (Five Strata) – Use scientific na	mes of p	plants.		Sampling Point: DP-9, UPL
201/201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	40%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Pinus taeda	10%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 20% (A/B)
6				
	50%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover:25%	20% of	total cover:	10%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	2070 01	total cover.		OBL species 0 x 1 = 0
4. Farmer and PfaRa	20%	YES	FACU	FACW species <u>0</u> x 2 = <u>0</u>
				FAC species 10 x 3 = 30
2. Juniperus virginiana				FACU species 90 x 4 = 360
3				UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 390 (B)
5				
6				Prevalence Index = B/A = 3.90
	40%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover:20%	20% of	total cover:	8%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	2070 01	total cover.		2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	:	= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines,
Polystichum acrostichoides	10%	YES	EACH	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
•			1700	
2				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
500/ //				
50% of total cover: <u>5%</u>	20% of	total cover:	2%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Understudie
		= Total Cove		Hydrophytic Vegetation
E00/ -11-1-1				Present? Yes No X
50% of total cover:		iotal cover:		
Remarks: (Include photo numbers here or on a separate sh	neet.)			

Sampling Point: DP-9, UPL

Depth	Matrix		Redox Features	2 Parada
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc	
0-6	10YR 4/3	100		Sandy Loam_
6-18	10YR 6/4	100		Sandy Loam
	-			
		pletion, RM=R	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
/dric Soil	Indicators:			Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA	
	stic (A3)		Thin Dark Surface (S9) (MLRA 147, 14	
	en Sulfide (A4) d Layers (A5)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	a Layers (A5) ack (A10) (LRR N)		Depleted Matrix (F3)Redox Dark Surface (F6)	(MLRA 136, 147) Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ice (A11)	Nedox Dark Surface (10) Depleted Dark Surface (F7)	Other (Explain in Remarks)
	ark Surface (A12)	(,)	Redox Depressions (F8)	
	Mucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR N	N,
	A 147, 148)		MLRA 136)	
_ Sandy G	Bleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122	³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Floodplain Soils (F19) (MLR	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127	unless disturbed or problematic.
estrictive l	Layer (if observed	l):		
Type:			<u> </u>	
Depth (in	ches):		_	Hydric Soil Present? Yes No _X
emarks:				•

Project/Site: Cumberland	Coun	ity P	roperty	/ City/0	County: Cu	ımberlan	d County	Sampling Date:	4/9/2018	
Applicant/Owner: CWV, LLC; o								Sampling Poin		
Investigator(s): Hannah L.	Miller			Secti	on Townshir	n Range:		camping r on A-1		
Landform (hillslope, terrace, et									ne (%)· 1-3%	
Subregion (LRR or MLRA): n										
Soil Map Unit Name: Chewa							NWI classifi		!-	
	Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)									
Are Vegetation, Soil								present? Yes X	< No.	
Are Vegetation, Soil							explain any answ		NO	
SUMMARY OF FINDIN		-							atures etc	
SOMMAN OF THE			JII SILC	map snowing san		int locati	ons, transect	s, important le		
Hydrophytic Vegetation Pres	ent?	,	Yes X	No	Is the Sam	npled Area				
Hydric Soil Present?		,	Yes <u>X</u>	No	within a W		$_{Yes}$ $ imes$	No	<u>-</u>	
Wetland Hydrology Present?		,	Yes <u>X</u>	No						
Remarks:										
Data point was taken	aavt ta	floo	E 101							
Data point was taken i	iext to	iiag	⊏-104.							
HYDROLOGY										
Wetland Hydrology Indicate	ors:						Secondary Indic	ators (minimum of t	wo required)	
Primary Indicators (minimum	of one	is req	uired; ch	eck all that apply)		Surface Soil Cracks (B6)				
X Surface Water (A1)				True Aquatic Plants ((B14)		Sparsely Ve	egetated Concave S	Surface (B8)	
X High Water Table (A2)				Hydrogen Sulfide Od			X Drainage Pa	-	, ,	
X Saturation (A3)				Oxidized Rhizospher		Roots (C3)				
X Water Marks (B1)				Presence of Reduce	_	, ,		Water Table (C2)		
Sediment Deposits (B2)				Recent Iron Reduction		oils (C6)	Crayfish Bu			
Drift Deposits (B3)				Thin Muck Surface (0	C7)		Saturation \	/isible on Aerial Ima	agery (C9)	
Algal Mat or Crust (B4)			_	Other (Explain in Rei	marks)		Stunted or S	Stressed Plants (D1)	
Iron Deposits (B5)							X Geomorphic	Position (D2)		
Inundation Visible on Ae	rial Imag	gery (B7)				Shallow Aquitard (D3)			
X Water-Stained Leaves (E	39)						Microtopogr	aphic Relief (D4)		
Aquatic Fauna (B13)							FAC-Neutra	al Test (D5)		
Field Observations:										
Surface Water Present?	Yes	X	No	Depth (inches): 0"						
Water Table Present?				Depth (inches): 6"						
Saturation Present?				Depth (inches): 2"		Wetland	Hydrology Prese	nt? Yes X	No	
(includes capillary fringe)										
Describe Recorded Data (str	eam gau	uge, n	nonitorin	g well, aerial photos, pre	evious inspec	ctions), if av	ailable:			
Remarks:										

/EGETATION (Five Strata) – Use scientific na	ames of _l	olants.		Sampling Point: DP-10
201.001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
1				matric obe, i now, of i no (A)
				Total Number of Dominant Species Across All Strata: 3 (B)
				Species Across All Strata: (B)
4				Percent of Dominant Species That Are OBL FACW, or FAC: 100% (A/B)
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover:		OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')	=0/	\/=0	E4.014/	FACW species x 2 =
1. Betula nigra	5%	YES	FACW	FAC species x 3 =
2. Lindera benzoin	5%	YES	FAC	FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				(2)
6				Prevalence Index = B/A =
	10%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 5%				1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	2070 01	total covor.		2 - Dominance Test is >50%
_				3 - Prevalence Index is ≤3.0 ¹
* 				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	90%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
10				ft (1 m) in height.
				Woody vine – All woody vines, regardless of height.
11	90%	= Total Cov		
45				
50% of total cover: 45	<u>%</u> 20% of	total cover:	18%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cov	er	Hydrophytic Vegetation
50% of total cover:	20% of	total cover		Present? Yes X No
		ioiai covel.		
Remarks: (Include photo numbers here or on a separate s	,			
Large, broad low lying area next to a toe of	slope fea	ature resu	ulting in a	a saturated floodplain.

SOIL Sampling Point: DP-10

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the i	ndicator	or confirm	n the absence of indicators.)						
Depth	Matrix		Redo	x Feature:	S								
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks						
0-5	10YR 4/2	100					Sandy Loam						
5-18	10YR 7/1	85	7.5YR 6/6	15	С	PL	Sandy Loam						
	-												
	-												
				-									
	-												
	-												
1Typo: C-C	oncentration, D=Dep	lotion PM-	-Poducod Matrix MS	S-Mackad	I Sand Gr	nine	² Location: PL=Pore Lining, M=Matrix.						
Hydric Soil		ielion, Rivi=	Reduced Matrix, Mc	s=iviasked	Sand Gra	airis.	Indicators for Problematic Hydric Soils ³ :						
-			Dork Surface	(87)									
Histosol	pipedon (A2)		Dark Surface Polyvalue Be		ca (SR) (N	II D A 1/17	2 cm Muck (A10) (MLRA 147) 148) Coast Prairie Redox (A16)						
Black Hi			Thin Dark Su				(MLRA 147, 148)						
	en Sulfide (A4)		Loamy Gleye			41, 140)	Piedmont Floodplain Soils (F19)						
	d Layers (A5)		X Depleted Mat	,	/		(MLRA 136, 147)						
	ick (A10) (LRR N)		Redox Dark S	. ,	⁻ 6)		Very Shallow Dark Surface (TF12)						
Depleted	d Below Dark Surface	e (A11)	Depleted Dar	k Surface	(F7)		Other (Explain in Remarks)						
Thick Da	ark Surface (A12)		Redox Depre										
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan		es (F12) (LRR N,							
	A 147, 148)		MLRA 13				2						
	Gleyed Matrix (S4)			Umbric Surface (F13) (MLRA 136, 122) Sind most Flood plain Soils (F10) (MLRA 148)									
	Redox (S5)			Piedmont Floodplain Soils (F19) (MLRA 148) Red Parent Material (F21) (MLRA 127, 147) wetland hydrology must be pre-unless disturbed or problemation									
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	7) unless disturbed or problematic.						
	Layer (if observed):												
Type:							· · · · · · · · · · · · · · · · · · ·						
	ches):						Hydric Soil Present? Yes X No No						
Remarks:													

Project/Site: Cumberland Cou	nty Property	City/County:	Cumberland	d County g	Sampling Date: 4/9/2018			
Applicant/Owner: CWV, LLC; c/o J		, ,			_ Sampling Point: <u>DP-10, UPL</u>			
Investigator(s): Shannon D. Hill,		Section, Towns	ship. Range:	Tax Map #45-A-1	<u>-</u>			
Landform (hillslope, terrace, etc.): <u>I</u>								
Subregion (LRR or MLRA): n/a					Datum:			
Soil Map Unit Name: Poindexter V				NWI classificat				
Are climatic / hydrologic conditions o		e of year? Yes X	No ((If no, explain in Rei				
Are Vegetation, Soil,					esent? Yes X No			
Are Vegetation, Soil,				explain any answers				
	, , , , , , , , , , , , , , , , , , , ,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(, ,	,			
SUMMARY OF FINDINGS -	Attach site map sho	wing sampling p	point location	ons, transects,	important features, etc.			
Hydrophytic Vegetation Present?	Yes No_X							
Hydric Soil Present?	Yes No_X		Sampled Area a Wetland?	Yes	No			
Wetland Hydrology Present?	Yes No X				<u> </u>			
Remarks:								
	5 - 101							
Data point was taken adjac	ent to flag E-184.							
HYDROLOGY								
Wetland Hydrology Indicators:				Secondary Indicato	ors (minimum of two required)			
Primary Indicators (minimum of one	e is required: check all that a	(vlage		Surface Soil C				
Surface Water (A1)	-	uatic Plants (B14)			etated Concave Surface (B8)			
High Water Table (A2)		n Sulfide Odor (C1)		Drainage Patte				
Saturation (A3)	· -	Rhizospheres on Livi	ing Roots (C3)	Moss Trim Line				
Water Marks (B1)		e of Reduced Iron (C4			/ater Table (C2)			
Sediment Deposits (B2)		ron Reduction in Tilled		Crayfish Burro				
Drift Deposits (B3)		ck Surface (C7)		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (E:	xplain in Remarks)		Stunted or Stre	essed Plants (D1)			
Iron Deposits (B5)				Geomorphic P	osition (D2)			
Inundation Visible on Aerial Im	agery (B7)			Shallow Aquita	ard (D3)			
Water-Stained Leaves (B9)				Microtopograp	hic Relief (D4)			
Aquatic Fauna (B13)				FAC-Neutral T	est (D5)			
Field Observations:								
	s No X Depth (i							
	s No X_ Depth (i							
Saturation Present? Yes	s No X_ Depth (i	inches):	Wetland H	lydrology Present	? Yes No <u>X</u>			
(includes capillary fringe) Describe Recorded Data (stream g	auge, monitoring well, aeria	l photos, previous ins	pections), if ava	ilable:				
December Necestada Data (etream g	adgo, mormornig won, dona	ii priotoo, proviodo iiio	poonono), n ava	mabio.				
Remarks:								
Kemana.								

/EGETATION (Five Strata) – Use scientific na	mes of _l	plants.		Sampling Point: DP-10, UPL
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?	Status	Number of Dominant Species
1. Liriodendron tulipfera	20%	YES	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. Fagus grandifolia	30%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)
6.				That Are OBE, I AGW, OF I AG.
<u> </u>	50%	= Total Cov		Prevalence Index worksheet:
25%				Total % Cover of: Multiply by:
50% of total cover: 25%	20% of	total cover:	10 /0	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20'				FACW species <u>0</u> x 2 = <u>0</u>
-	20%	YES	FAC	FAC species 30 x 3 = 90
2				FACU species 70 x 4 = 280
3				UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 370 (B)
5				Column Totals. (A)
6				Prevalence Index = B/A = 3.70
	20%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 10%				1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	20 /6 01	iolai covei.	.,,,	2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	:	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
			1700	
0				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				, ,
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximately 3 to 20 ft (1 to 6 fil) in neight.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Mandania Allumadu in a mandania (haish)
11				Woody vine – All woody vines, regardless of height.
	20%	= Total Cov	er	
50% of total cover: 10%				
Woody Vine Stratum (Plot size: 20'x20')	20 /6 01	total cover.	-1 /0	
1. Smilax rotundifolia	10%	YES	FAC	
2				
3				
4				
5				Hydrophytic
	10%	= Total Cov	er	Vegetation
50% of total cover: 5%	20% of	total cover:	2%	Present? Yes NoX
Remarks: (Include photo numbers here or on a separate si				
Tromano. (morado prioto númboro nere or on a separate si				

Sampling Point: DP-10, UPL

	Matrix		Redox Features	
(inches)	Color (moist)	%	Color (moist) % Type ¹ Lo	c ² <u>Texture</u> <u>Remarks</u>
0-4	10YR 5/3	100		Sandy Loam_
4-18	10YR 5/4	100		Sandy Loam
				
				
	-			
Type: C=C(oncentration D=De	nletion RM-R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
lydric Soil I		piction, rawi–ra	Caucca Matrix, MO-Masked Saria Grains.	Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Below Surface (S8) (MLRA	
Black Hi			Thin Dark Surface (S9) (MLRA 147, 1	
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
Thick Da	ark Surface (A12)		Redox Depressions (F8)	
Sandy M	Mucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR	N,
	A 147, 148)		MLRA 136)	
Sandy G	Sleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 12	2) ³ Indicators of hydrophytic vegetation and
Sandy R	Redox (S5)		Piedmont Floodplain Soils (F19) (MLF	RA 148) wetland hydrology must be present,
Stripped	Matrix (S6)		Red Parent Material (F21) (MLRA 12	7, 147) unless disturbed or problematic.
Restrictive I	Layer (if observed):		
Type:			<u></u>	
	choc):			Hydric Soil Present? Yes No X
Depth (ind	Liles)			
Depth (ind				
	ones).			
	ones).			
	olies).			
	ones).			
	olies).			
	olies).			
Depth (ind	olies).			
	olies).			
	olies).			
	illes).			
	olies).			

Project/Site: Cumberland	Coun	ty P	roperty	Citv/C	County: Cu	umberlan	d County	_ Sampling Date:	1/9/2018	
Applicant/Owner: CWV, LLC; o	o James	H. Ma	artin					Sampling Point:		
Investigator(s): Hannah L.	Miller			Section Section	on. Townshi	p. Range:				
Landform (hillslope, terrace, et									(%): 0-2%	
Subregion (LRR or MLRA): n										
Soil Map Unit Name: Poinde						-	NWI classifi			
Are climatic / hydrologic condit							(If no, explain in I			
Are Vegetation, Soil					rbed?			present? Yes X	No	
Are Vegetation, Soil		-		-			explain any answ		NO	
Are vegetation, 30ii	, 0	TTIYU	lology	naturally problem	auc:	(II rieeded,	explain any answ	ers in Nemarks.)		
SUMMARY OF FINDIN	GS – /	Attac	ch site	map showing san	npling po	int locati	ons, transect	s, important fea	tures, etc.	
Hydrophytic Vegetation Pres	ent?	,	Yes X	No	Is the San	npled Area				
Hydric Soil Present?			Yes X		within a W		$_{Yes}$ $ imes$	No		
Wetland Hydrology Present?		,	Yes X	No						
Remarks:										
Data naint was taken	44-	£1 ~ ~.	F 00							
Data point was taken i	iext to	nag	F-28.							
HYDROLOGY										
Wetland Hydrology Indicate	ors:						Secondary Indic	ators (minimum of tw	o required)	
Primary Indicators (minimum		is rea	uired: che	eck all that apply)		Surface Soil Cracks (B6)				
X Surface Water (A1)	01 0110 1	0 1041		_ True Aquatic Plants ((R14)		Sparsely Vegetated Concave Surface (B8)			
X High Water Table (A2)				_ Hydrogen Sulfide Od			X Drainage Pa	-	Trace (Bo)	
X Saturation (A3)				Oxidized Rhizospher		Roots (C3)	_			
X Water Marks (B1)				Presence of Reduce	_	110013 (00)				
Sediment Deposits (B2)					esence of Reduced Iron (C4) Dry-Season Water Table (C2) ecent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8)					
Drift Deposits (B3)				Thin Muck Surface (0110 (00)	· ·	/isible on Aerial Imag	iery (C9)	
Algal Mat or Crust (B4)				_ Other (Explain in Re				Stressed Plants (D1)	(00)	
X Iron Deposits (B5)					,		X Geomorphic			
Inundation Visible on Ae	rial Ima	aerv (B7)				Shallow Aqı	` '		
X Water-Stained Leaves (E		, - · , ·	,					raphic Relief (D4)		
Aquatic Fauna (B13)	, ,						FAC-Neutral Test (D5)			
Field Observations:						1				
Surface Water Present?	Voc	×	No	Depth (inches): _0"	•					
Water Table Present?				Depth (inches): 4"						
				Depth (inches):4		Wetlend	Undrelegy Droop	ent? Yes X	Na	
Saturation Present? (includes capillary fringe)	res_		NO	Depth (inches):+		wetiand	nyarology Prese	ent? Yes /_	No	
Describe Recorded Data (str	eam gai	uge, n	nonitoring	g well, aerial photos, pre	evious inspec	ctions), if av	ailable:			
Remarks:										

/EGETATION (Five Strata) – Use scientific na	mes of p	plants.		Sampling Point: DP-11
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?		Number of Dominant Species
1. Liquidambar styraciflua	20%	YES	FAC	That Are OBL, FACW, or FAC: 6 (A)
2. Acer rubrum	20%	YES	FAC	
3				Total Number of Dominant Species Across All Strata: 6 (B)
•				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
	40%	= Total Cov	er	
50% of total cover: _ 20%	20% of	total cover:	8%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	_			OBL species x 1 =
1. Lindera benzoin	20%	YES	FAC	FACW species x 2 =
2. Ilex opaca	15%	YES	FAC	FAC species x 3 =
<u></u>	10%			FACU species x 4 =
3. Carpinus caroliniana	1076	YES	FAC	UPL species x 5 =
4				Column Totals: (A) (B)
5				(,
6				Prevalence Index = B/A =
	45%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 22.5°				1 - Rapid Test for Hydrophytic Vegetation
	70 20% 01	total cover.	0 70	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				3 - Prevalence Index is ≤3.0¹
1				
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				Indicators of hydric soil and wetland hydrology must
<u> </u>		= Total Cov		be present, unless disturbed or problematic.
				Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	15%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3.				approximately 20 ft (6 m) or more in height and less
A				than 3 in. (7.6 cm) DBH.
				Shrub Woody plants evaluding woody vines
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
•••		= Total Cov		
7.50/				
50% of total cover: 7.5%	20% of	total cover:	3 /0	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cov	er	Vegetation
50% of total cover:	20% of	total cover		Present? Yes X No
.		.5.0. 50 101.		
Remarks: (Include photo numbers here or on a separate sl	ieet.)			

Sampling Point: DP-11

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the i	ndicator	or confirm	the absenc	e of inc	licators.)			
Depth	Matrix			x Feature	s							
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks			
0-4	10YR 3/3	100					Sandy Lo	am				
4-18	10YR 6/1	90	10YR 6/8	10	С	PL	Sandy Loa	.m				
					-							
	-	· ——	-									
					-							
							-	_				
								_				
¹ Type: C=Ce	oncentration, D=Dep	letion. RM	=Reduced Matrix. M	S=Masked	Sand Gr	ains.	² Location:	PL=Por	e Lining, M=Matrix.			
Hydric Soil		,	,			-			for Problematic Hydric Soils ³ :			
Histosol			Dark Surface	e (S7)					uck (A10) (MLRA 147)			
	pipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147.			Prairie Redox (A16)			
	stic (A3)		Thin Dark S				-,		RA 147, 148)			
	en Sulfide (A4)		Loamy Gley			,			ont Floodplain Soils (F19)			
	d Layers (A5)		X Depleted Ma		,		_		RA 136, 147)			
	ick (A10) (LRR N)		Redox Dark		- 6)				nallow Dark Surface (TF12)			
	d Below Dark Surface	e (A11)	Depleted Da						Explain in Remarks)			
Thick Da	ark Surface (A12)		Redox Depr									
Sandy M	lucky Mineral (S1) (L	RR N,	Iron-Mangar	ese Mass	es (F12) (LRR N,						
	\ 147, 148)		MLRA 13	36)								
Sandy G	Bleyed Matrix (S4)		Umbric Surfa	ace (F13) ((MLRA 13	6, 122)	³ In	dicators	s of hydrophytic vegetation and			
Sandy R	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present,									
Stripped	Matrix (S6)		Red Parent	Material (F	21) (MLR	A 127, 147	7) u	nless d	isturbed or problematic.			
Restrictive I	Layer (if observed):											
Type:												
Depth (in	ches):						Hydric So	il Prese	ent? Yes X			
Remarks:							.,					
Remarks.												

SOIL

Project/Site: Cumberland	l County Pi	ropert	ty	City/C	county: Cu	mberland	d County	Sampling Date:	4/9/2018	
Applicant/Owner: CWV, LLC								Sampling Poin		
Investigator(s): Hannah L.				rin Section	on. Township	. Range:			<u>D1 11, 01 L</u>	
Landform (hillslope, terrace, e									ne (%)· 2-4%	
Subregion (LRR or MLRA):r										
Soil Map Unit Name: Poinde								•	II	
							NWI classific			
Are climatic / hydrologic condi					'es <u> </u>		(If no, explain in R			
Are Vegetation, Soil _								present? Yes>	No	
Are Vegetation, Soil _	, or Hydi	rology _		naturally problema	atic? ((If needed, e	explain any answe	ers in Remarks.)		
SUMMARY OF FINDIN	GS – Attac	h site	e m	ap showing san	npling poi	nt locatio	ons, transects	s, important fe	eatures, etc.	
Hydrophytic Vegetation Pres	ent?	⁄es		No_X	Is the Sam	nled Area				
Hydric Soil Present?				No X	within a We		Yes	No <u> </u>	_	
Wetland Hydrology Present?	,	es		No X					_	
Remarks:										
Data point was taken	adjacent to	flag F	-28.							
	-	_								
HYDROLOGY										
Wetland Hydrology Indicat	ors:						Secondary Indica	ators (minimum of	two required)	
Primary Indicators (minimum	ı of one is requ	uired; c	heck	all that apply)			Surface Soil	Cracks (B6)		
Surface Water (A1)				True Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)				Hydrogen Sulfide Od			Drainage Patterns (B10)			
Saturation (A3)				Oxidized Rhizospher		Roots (C3)	Moss Trim L			
Water Marks (B1)				Presence of Reduced	_	(,		Water Table (C2)		
Sediment Deposits (B2)				Recent Iron Reduction		ils (C6)				
Drift Deposits (B3)				Thin Muck Surface (C		()	Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)				Other (Explain in Rer			Saturation visible on Aerial imagery (C9) Stunted or Stressed Plants (D1)			
Iron Deposits (B5)				(- · · · · · · · · · · · · · · · · · ·	,		Geomorphic Position (D2)			
Inundation Visible on Ae	rial Imagery (I	37)					Shallow Aqu			
Water-Stained Leaves (• • •	,						aphic Relief (D4)		
Aquatic Fauna (B13)	50)						FAC-Neutral			
							1710 11041141	1 1001 (20)		
Field Observations:			V	5 4 (1 1)						
Surface Water Present?				Depth (inches):						
Water Table Present?				Depth (inches):						
Saturation Present?	Yes	No	<u>X</u> _	Depth (inches):		Wetland H	Hydrology Preser	nt? Yes	No <u>X</u>	
(includes capillary fringe) Describe Recorded Data (str		a a nita ri		vall agrical photograps	u da ua inanaat	tions) if our	ilahla:			
Describe Recorded Data (sti	eam gauge, n	IOTIILOTI	ng w	reii, aeriai priotos, pre	vious inspeci	lions), ii ava	aliable.			
Remarks:										

/EGETATION (Five Strata) – Use scientific na	mes of p	olants.		Sampling Point: DP-11, UPL
201.001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?	Status	Number of Dominant Species
1. Fagus grandifolia	40%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Liriodendron tulipfera	20%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Barrant of Barring of Canada
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)
6.				
	60%	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: 30%	20% of	total cover:	12%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20 /6 01	total cover.		OBL species 0 x 1 = 0
	10%	VEC	EACH	FACW species <u>0</u> x 2 = <u>0</u>
		YES	FACU	FAC species 10 x 3 = 30
2. Ilex opaca			FAC	FACU species x 4 =280
3				UPL species x 5 = 100
4				Column Totals:
5				
6				Prevalence Index = B/A = 4.10
	20%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:10%	20% of	total cover:	4%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
Sanguinaria canadensis	20%	YES	UPL	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3.				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				
	20%	= Total Cov	er	
50% of total cover: 10%	20% of	total cover:	4%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5		Tatalo		Hydrophytic
		= Total Cov		Vegetation Present? Yes No
50% of total cover:	20% of	total cover:		Present? Yes No
Remarks: (Include photo numbers here or on a separate sl	neet.)			

Sampling Point: DP-11, UPL

	<u>Matrix</u>		Redox Features	De contra
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc ² Textu	
0-4	10YR 4/3	100	Sandy	Loam
4-10	10YR 5/4	100	Sandy I	_oam
10-18	10YR 6/6	100	Sandy C	. Loam
	-			
	-			
	-			
<u> </u>		<u> </u>		
[vne: C=C(ncentration D-De	nletion RM-R	educed Matrix, MS=Masked Sand Grains. ² Location	on: PL=Pore Lining, M=Matrix.
	Indicators:	epielion, Kivi=K	educed Matrix, MS=Masked Sand Grains.	Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA 147, 148)	Coast Prairie Redox (A16)
Black Hi			Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ick (A10) (LRR N)	200 (111)	Redox Dark Surface (F6) Depleted Dark Surface (F7)	Very Shallow Dark Surface (TF12)Other (Explain in Remarks)
	d Below Dark Surfa ark Surface (A12)	ace (ATT)	Redox Depressions (F8)	Other (Explain in Remarks)
	fucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR N,	
	A 147, 148)	,	MLRA 136)	
Sandy G	Bleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
	tedox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148)	wetland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (MLRA 127, 147)	unless disturbed or problematic.
	_ayer (if observed	d):		
Type:			_	
			Hydri	c Soil Present? Yes No ×
Depth (inc	ches):			
	ches):			
Depth (inc	ches):			
	ches):			

Project/Site: Cumberland	County Property	Citv/C	County: Cumberla	nd County	Sampling Date: 4/11/2018
Applicant/Owner: CWV, LLC; of	:/o James H. Martin			State: VA	Sampling Point: DP-12
Investigator(s): Robert Goo	odwin, Hannah L. N	Miller Section	on Townshin Range		
			· · · · · ·		Slope (%): 1-3%
Soil Map Unit Name: Cecil s				NWI classific	
Are climatic / hydrologic condit				_ (If no, explain in F	present? Yes X No
Are Vegetation, Soil					
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (if needed	l, explain any answe	ers in Remarks.)
SUMMARY OF FINDIN	GS – Attach site	map showing san	npling point locat	ions, transects	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area		
Hydric Soil Present?	Yes X		within a Wetland?	$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	Yes X	No			
Remarks:					
Data point was taken	next to flag M-291.				
LIVERGLOCY					
HYDROLOGY				O a sandam da d'a	- ((
Wetland Hydrology Indicat				-	ators (minimum of two required)
Primary Indicators (minimum				Surface Soil	` '
Surface Water (A1)		_ True Aquatic Plants (getated Concave Surface (B8)
X High Water Table (A2)		_ Hydrogen Sulfide Od		X Drainage Pa	
Saturation (A3)		_ Oxidized Rhizospher	-		
X Water Marks (B1)		_ Presence of Reduced			Water Table (C2)
Sediment Deposits (B2)		_ Recent Iron Reductio		Crayfish Bur	
Drift Deposits (B3)		_ Thin Muck Surface (C			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	-	_ Other (Explain in Rer	narks)		Stressed Plants (D1)
Iron Deposits (B5)	rial Imagan (DZ)			X Geomorphic	
Inundation Visible on Ae Water-Stained Leaves (I				Shallow Aqu	
· ·	39)			· -	aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutra	Tiest (D5)
Field Observations:					
Surface Water Present?		Depth (inches):			
Water Table Present?		Depth (inches):5"			~
Saturation Present? (includes capillary fringe)	Yes No <u>X</u>	Depth (inches):	Wetland	l Hydrology Prese	nt? Yes X No
Describe Recorded Data (str	eam gauge, monitoring	well, aerial photos, pre	vious inspections), if a	vailable:	
· ·	0 0 /	, , , , , ,	, ,,		
Remarks:					
Remarks.					

/EGETATION (Five Strata) – Use scientific n	ames of	plants.		Sampling Point: DP-12
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species
1. Acer rubrum	15%	YES	FAC	That Are OBL, FACW, or FAC: 6 (A)
2. Liquidambar styraciflua	20%	YES	FAC	Total Number of Descious
3				Total Number of Dominant Species Across All Strata: 7 (B)
i				Openies / toross / tir etrata.
4				Percent of Dominant Species
5	-			That Are OBL, FACW, or FAC: 85% (A/B)
6	0=0/			Prevalence Index worksheet:
	35%	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover: 17.	5% _{20% of}	total cover:	7%	
Sapling Stratum (Plot size: 20'x20'				OBL species x 1 =
1 Lindera benzoin	15%	YES	FAC	FACW species x 2 =
2 Carpinus caroliniana	20%	YES	FAC	FAC species x 3 =
3. Fagus grandifolia	10%	YES		FACU species x 4 =
3. r agus grandilolla	10 /0	150	FACU	UPL species x 5 =
4				Column Totals: (A) (B)
5				(-)
6				Prevalence Index = B/A =
	45%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% - (1-1-1				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 22.5	20% of	total cover:	9 /0	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	5%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2.				Cardina Massinglants analysis a massing
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximately 3 to 20 ft (1 to 6 ff) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				it (1 m) in noight.
				Woody vine – All woody vines, regardless of height.
11		T-1-1-0		
		= Total Cov		
50% of total cover: 2.5	<u>%</u> 20% of	total cover:	1%	
Woody Vine Stratum (Plot size: 20'x20')				
1. Vitis riparia	15%	YES	FACW	
2.				
3				
4	_			
5				Hydrophytic
	15%	= Total Cov	er	Vegetation
50% of total cover: 7.5	5% _{20% of}	total cover-	3%	Present? Yes X No
Remarks: (Include photo numbers here or on a separate				<u> </u>
remains. (moludo prioto numbers nere or on a separate	5.166t. <i>j</i>			

SOIL Sampling Point: DP-12

Profile Desc	ription: (Describe	to the dept	th needed to docun	nent the i	ndicator	or confirm	the absence of indicators.)				
Depth	Matrix		Redo	x Feature:	s						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks				
0-4	10YR 3/2	100					Sandy Loam				
4-18	10YR 6/2	90	7.5YR 5/6	10	С	PL	Sandy Loam				
		· 			-						
	-										
							·				
		·		·	·						
					-						
		· 			-						
1		la Cara DM	Deduced Metric MC				21 and 22 Plane Distance M. Matrice				
Hydric Soil	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	s=Masked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :				
-			D 10 ((07)			•				
Histosol			Dark Surface		(CO) (N	U D A 447	2 cm Muck (A10) (MLRA 147)				
	oipedon (A2)		Polyvalue Be								
Black Hi	en Sulfide (A4)		Thin Dark Su Loamy Gleye			47, 140)	(MLRA 147, 148) Piedmont Floodplain Soils (F19)				
	d Layers (A5)		Z Depleted Mat	,	r <i>z)</i>		(MLRA 136, 147)				
	ick (A10) (LRR N)		Redox Dark S	. ,	·6)		Very Shallow Dark Surface (TF12)				
	d Below Dark Surfac	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)				
	ark Surface (A12)	- (Redox Depre								
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			LRR N,					
MLRA	\ 147, 148)		MLRA 13	MLRA 136)							
	Bleyed Matrix (S4)			Umbric Surface (F13) (MLRA 136, 122) ³ Indicators of hydrophytic vegetation							
	Redox (S5)		Piedmont Flo								
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	7) unless disturbed or problematic.				
Restrictive I	Layer (if observed):										
Type:											
Depth (in	ches):						Hydric Soil Present? Yes X No No				
Remarks:											

Project/Site: Cumberland Cou	nty Property	City/C	County: Cumberlan	d County	Sampling Date: 4/11/2018		
Applicant/Owner: CWV, LLC; c/o J			,		Sampling Point: <u>DP-12, UPL</u>		
Investigator(s): Hannah L. Miller		n Section	on Township Range	Tax Map #37-A			
Landform (hillslope, terrace, etc.):							
Soil Map Unit Name: Cecil sandy				NWI classific	· · · · · · · · · · · · · · · · · · ·		
Are climatic / hydrologic conditions o				(If no, explain in R			
Are Vegetation, Soil,					present? Yes X No		
Are Vegetation, Soil,				explain any answe			
Are vegetation, Joii,	or riyarology	naturally problem	alic: (Il liceded,	explain any answe	is in Kemarks.)		
SUMMARY OF FINDINGS -	Attach site ma	ap showing san	npling point locati	ions, transects	, important features, etc.		
Hydrophytic Vegetation Present?	Yes	No_X	l- 11- 0				
Hydric Soil Present?	Yes		Is the Sampled Area within a Wetland?	Yes	No <u>X</u>		
Wetland Hydrology Present?	Yes	No X			<u> </u>		
Remarks:							
Data point was taken adjace	ent to flag M-291	1.					
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)		
Primary Indicators (minimum of one	in required; about	all that apply)		Surface Soil	· · · · · · · · · · · · · · · · · · ·		
	-		(D4.4)				
Surface Water (A1)		Frue Aquatic Plants (Sparsely Vegetated Concave Surface (B8)Drainage Patterns (B10)			
High Water Table (A2) Saturation (A3)		Hydrogen Sulfide Od Dyidized Rhizospher	es on Living Roots (C3)				
Water Marks (B1)		Presence of Reduce			Water Table (C2)		
Sediment Deposits (B2)			on in Tilled Soils (C6)	Crayfish Bur			
Drift Deposits (B3)		Thin Muck Surface (isible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Other (Explain in Rer			tressed Plants (D1)		
Iron Deposits (B5)	_	` '	,		Position (D2)		
Inundation Visible on Aerial Image	agery (B7)			Shallow Aqu			
Water-Stained Leaves (B9)				Microtopogra	aphic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)		
Field Observations:							
Surface Water Present? Yes	No <u>X</u>	Depth (inches):					
Water Table Present? Yes	No <u>X</u>	Depth (inches):					
Saturation Present? Yes	No <u>X</u>	Depth (inches):	Wetland	Hydrology Preser	nt? Yes No <u>X</u>		
(includes capillary fringe)				a ilakia.			
Describe Recorded Data (stream ga	auge, monitoring we	eii, aeriai photos, pre	evious inspections), if av	raliable:			
Demontos							
Remarks:							

/EGETATION (Five Strata) – Use scientific ı	names of	plants.	Sampling Point: DP-12, UPL
001-001	Absolute	Dominant Indicate	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 20'x20') 1. Pinus taeda	% Cover 85%	Species? Status YES FAC	Number of Dominant Species That Are OBL, FACW, or FAC:
2			Total Number of Dominant
3			_ Species Across All Strata: 2 (B)
4			
5			Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
6.			- Markie Obe, FAOW, OFFAO.
·		= Total Cover	Prevalence Index worksheet:
50% of total cover: 42			Total % Cover of: Multiply by:
	<u>.0 70</u> 20% 01	total cover: 17 70	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20')	450/	\/F0	FACW species <u>0</u> x 2 = <u>0</u>
1. Fagus grandifolia		YES FACL	FAC species <u>85</u> x 3 = <u>255</u>
2			FACU species 15 x 4 = 60
3			UPL species 0 x 5 = 0
4			Column Totals: 100 (A) 315 (B)
5			2.15
6	4.50/		Prevalence Index = B/A = 3.15
	15%	= Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover: 7.5	5% _{20% of}	total cover: 3%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'			2 - Dominance Test is >50%
1			3 - Prevalence Index is ≤3.0 ¹
2			4 - Morphological Adaptations ¹ (Provide supporting
3			data in Remarks or on a separate sheet)
4			Problematic Hydrophytic Vegetation ¹ (Explain)
5			_
6			¹Indicators of hydric soil and wetland hydrology must
V:		= Total Cover	be present, unless disturbed or problematic.
500/ /			Definitions of Five Vegetation Strata:
50% of total cover:			Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1			
2			caping recay plants, exchang recay rines,
3			approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4			_
5			Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6			_ ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `
7			 Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8			plants, except woody vines, less than approximately 3
9			_ ft (1 m) in height.
10			Woody vine – All woody vines, regardless of height.
11			- Troody Time 7 in Nobaly Times, regardless of Height.
		= Total Cover	
50% of total cover:	20% of	total cover:	_
Woody Vine Stratum (Plot size: 20'x20')			
1			
2			_
3			_
			_
			-
5			- Hydrophytic
		= Total Cover	Vegetation Present? Yes No_ X
50% of total cover:	20% of	total cover:	_ NO NO
Remarks: (Include photo numbers here or on a separate	sheet.)		

Sampling Point: DP-12, UPL

	Matrix		Redox Features	Testore
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc ²	
0-4	10YR 6/3	100		Sandy Loam
4-10	2.5Y 6/4	100		Sandy Loam
10-18	10YR 6/6	100		Sandy C. Loam
				-
				· ·
	anapatration D. De	nlation DM C	Laducad Matrix MC Masked Cond Crains	21 continue DI Doro Lining M Matrix
	Indicators:	epielion, Rivi=R	deduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Below Surface (S8) (MLRA 147	
Black Hi			Thin Dark Surface (S9) (MLRA 147, 148)	· • - · · · · · · · · · · · · · · · · ·
Hydroge	en Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ace (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	ark Surface (A12) Mucky Mineral (S1)	/I DD N	Redox Depressions (F8)Iron-Manganese Masses (F12) (LRR N,	
-	147, 148)	(LKK N,	MLRA 136)	
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA 1	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127, 14	
estrictive I	Layer (if observed	d):		
Туре:			<u> </u>	
	-l\·		<u></u>	Hydric Soil Present? Yes No ×
Depth (ind	cnes):			
Depth (included)	cnes):			
	cnes):			

Project/Site: Cumberland	County Property	' Citv/C	county: Cumberlar	nd County	Sampling Date: 4/11/2018	
Applicant/Owner: CWV, LLC; of					Sampling Point: DP-13	
Investigator(s): Hannah L.		dwin Section	on, Township, Range: _	Tax Map # 37-	A-69	
• · · /					Slope (%):0-2%	
					Datum:	
Soil Map Unit Name: Pacole		at	-	NWI classific		
Are climatic / hydrologic condi		I for this time of year?				
			bad? Ara "Narm	(If no, explain in F	present? Yes X No	
Are Vegetation, Soil						
Are Vegetation, Soil	, or Hydrology	naturally problems	atic? (if needed,	, explain any answe	ers in Remarks.)	
SUMMARY OF FINDIN	GS – Attach site	map showing san	npling point locat	ions, transects	s, important features, etc.	
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area	•		
Hydric Soil Present?	Yes X		within a Wetland?	$_{Yes}$ $ imes$	No	
Wetland Hydrology Present?					_	
Remarks:						
					· ·	
Data point was taken	next to flag H-333.					
HYDROLOGY						
	oral			Socondary India	otors (minimum of two required)	
Wetland Hydrology Indicat		ack all that apply		-	ators (minimum of two required)	
Primary Indicators (minimum			D14)		Cracks (B6)	
Surface Water (A1)		_ True Aquatic Plants (Sparsely Vegetated Concave Surface (B8)Drainage Patterns (B10)		
		_ Hydrogen Sulfide Od		_		
Saturation (A3)		_ Oxidized Rhizospher	= : :			
Water Marks (B1)		_ Presence of Reduced			Water Table (C2)	
Sediment Deposits (B2)		_ Recent Iron Reductio		Crayfish Bu		
X Drift Deposits (B3)		_ Thin Muck Surface (C			/isible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)	_	_ Other (Explain in Rer	narks)	Stunted or S X Geomorphic	Stressed Plants (D1)	
Iron Deposits (B5) Inundation Visible on Ae	rial Imagary (P7)			Shallow Aqu		
X Water-Stained Leaves (I					raphic Relief (D4)	
Aquatic Fauna (B13)	<i>39)</i>			FAC-Neutra		
				I AC-Neulla	1 1631 (D3)	
Field Observations:	Vac No X	Depth (inches):				
Surface Water Present?						
Water Table Present?		Depth (inches):			🗸	
Saturation Present? (includes capillary fringe)	Yes _ ^ No	Depth (inches):	Wetland	Hydrology Prese	nt? Yes X No	
Describe Recorded Data (str	eam gauge, monitoring	g well, aerial photos, pre	vious inspections), if a	/ailable:		
·						
Remarks:						
					ļ.	

/EGETATION (Five Strata) – Use scientific na	mes of p	olants.		Sampling Point: DP-13
· · · · · · · · · · · · · · · · · · ·	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species
1. Liquidambar styraciflua	20%	YES	FAC	That Are OBL, FACW, or FAC: 6 (A)
2. Platanus occidentalis	15%	YES	FACW	Total Number of Deminent
3. Carpinus caroliniana	10%	YES	FAC	Total Number of Dominant Species Across All Strata: 7 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 85% (A/B)
6.				That Are OBL, FACW, or FAC: 85% (A/B)
0	4=0/	= Total Cove		Prevalence Index worksheet:
00.5				Total % Cover of: Multiply by:
50% of total cover: 22.5	<u>%</u> 20% of	total cover:	9%	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20'				FACW species x 2 =
1. Carpinus caroliniana	<u>15%</u>	YES	FAC	FAC species x 3 =
2. Fagus grandifolia	5%	YES	FACU	
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6.				Provolence Index - P/A -
0	20%	T-1-1-0		Prevalence Index = B/A =
		= Total Cove		Hydrophytic Vegetation Indicators:
50% of total cover: 10%	20% of	total cover:	4%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1				(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Woody vine - All woody vines, regardless of neight.
	:	= Total Cove	er	
50% of total cover:	20% of	total cover		
Woody Vine Stratum (Plot size: 20'x20')	2070 01	total oover.		
1 Vitis riparia	20%	YES	FACW	
2. Smilax rotundifolia	15%	YES	FAC	
2. Similax rotundilolla	1370		FAC	
3				
4				
5				Hydrophytic
	35%	= Total Cove	er	Hydrophytic Vegetation
50% of total cover: 17.5				Present? Yes X No
		ioiai cover.		
Remarks: (Include photo numbers here or on a separate sl	ieet.)			

SOIL Sampling Point: DP-13

Profile Description: (De	escribe to th	e depth n	eeded to docur	ment the i	ndicator	or confirm	n the abs	ence of indi	cators.)		
	Matrix			x Features	3						
(inches) Color (n			Color (moist)	%	Type ¹	Loc ²	<u>Textu</u>		Rem	narks	
0-4 10YR 5/2	2 10	00	_				Sandy	Loam			
4-18 10YR 7/	2 9	90 1	0YR 6/6	10	С	PL	Sandy	Loam			
											<u> </u>
					-		-				
<u> </u>											
					-		-				
·											
¹ Type: C=Concentration	, D=Depletion	n, RM=Red	duced Matrix, M	S=Masked	Sand Gra	ains.	² Locatio	n: PL=Pore	Lining, M=N	Matrix.	
Hydric Soil Indicators:										tic Hydric Sc	oils³:
Histosol (A1)		_	Dark Surface	e (S7)			_	2 cm Mud	ck (A10) (M	LRA 147)	
Histic Epipedon (A2))	_	Polyvalue Be	elow Surfa	ce (S8) (N	ILRA 147,	148) _	Coast Pra	airie Redox	(A16)	
Black Histic (A3)		_	Thin Dark Su			47, 148)			147, 148)		
Hydrogen Sulfide (A	,	-	Loamy Gleye		F2)		-			Soils (F19)	
Stratified Layers (A5	,	2	Depleted Ma					•	136, 147)		
2 cm Muck (A10) (LI		_	Redox Dark				-			furface (TF12))
Depleted Below DarThick Dark Surface ('') _	Depleted Da Redox Depre				-	Other (E)	plain in Re	marks)	
Sandy Mucky Minera		N.	Iron-Mangan			I RR N					
MLRA 147, 148)	ar (O1) (Litti		MLRA 13		33 (1 12) (
Sandy Gleyed Matrix	x (S4)		Umbric Surfa	-	MLRA 13	6, 122)		³ Indicators	of hydrophy	tic vegetation	and
Sandy Redox (S5)	` ,	_	Piedmont Flo				18)			st be present,	
Stripped Matrix (S6)		_	Red Parent I	Material (F	21) (MLR	A 127, 147	7)	unless dist	urbed or pr	oblematic.	
Restrictive Layer (if ob	served):										
Type:											
Depth (inches):							Hydric	Soil Presen	t? Yes_	× No_	
Remarks:							1 -				

Project/Site: Cumberland County Property	City/County: Cumberland County Sampling Date: 4/11/2018
Applicant/Owner: CWV, LLC; c/o James H. Martin	State: VA Sampling Point: <u>DP-13, UPL</u>
Investigator(s): Shannon D. Hill, Robert Goodwin	Section, Township, Range: Tax Map #37-A-69
	Local relief (concave, convex, none): Slope (%): 2-4%
Subregion (LRR or MLRA): n/a Lat: 37.58	
Soil Map Unit Name: Pacolet Wateree complex	NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this tim	
Are Vegetation, Soil, or Hydrology signif	\sim
Are Vegetation, Soil, or Hydrology natur	
natar	(ii needed, explain any anomore in remarks.)
SUMMARY OF FINDINGS – Attach site map sho	owing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No_>	Is the Sampled Area
Hydric Soil Present? Yes No_>	within a Wetland? Yes NoX
Wetland Hydrology Present? Yes No _>	<u>′</u>
Remarks:	
Data point was taken adjacent to flag H-333.	
Data point mas tanem asjacom to mag m soot	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that	 ` , ,
	uatic Plants (B14) Sparsely Vegetated Concave Surface (B8)
	n Sulfide Odor (C1) Drainage Patterns (B10)
	Rhizospheres on Living Roots (C3) Moss Trim Lines (B16)
	e of Reduced Iron (C4) Dry-Season Water Table (C2)
	ron Reduction in Tilled Soils (C6) Crayfish Burrows (C8)
	ck Surface (C7) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (E Iron Deposits (B5)	xplain in Remarks) Stunted or Stressed Plants (D1) Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (
Saturation Present? Yes No X Depth (, ———
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aeria	I photos, previous inspections), if available:
Remarks:	

/EGETATION (Five Strata) – Use scientific na	mes of p	olants.		Sampling Point: DP-13, UPL
201/201	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'x20'</u>) 1. Liriodendron tulipfera	% Cover 40%	Species?	Status FACU	Number of Dominant Species That Are ORL FACW or FAC: 1 (A)
				That Are OBL, FACW, or FAC: 1 (A)
2			-	Total Number of Dominant Species Across All Strata: 5 (B)
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5 6.				That Are OBL, FACW, or FAC: 20% (A/B)
0	40%	= Total Cov		Prevalence Index worksheet:
20%				Total % Cover of: Multiply by:
50% of total cover: 20%	20% of	total cover:	0 70	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20')	00.50/		E4011	FACW species $0 x 2 = 0$
1. Fagus grandifolia	22.5%	YES	FACU	FAC species 10 x 3 = 30
2. Ilex opaca	10%	YES	FAC	FACU species 90 x 4 = 360
	10%	YES	FACU	UPL species 0 x 5 = 0
4				Column Totals:100 (A)390 (B)
5				
6				Prevalence Index = B/A = 3.90
		= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover: <u>21.2</u>	<u>5%</u> 20% of	total cover:	8.5%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				1
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	:	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	17.5%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3.				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
10				ft (1 m) in height.
11.				Woody vine – All woody vines, regardless of height.
		= Total Cov	er	
7.00				
50% of total cover: <u>8.75%</u>	<u>6</u> 20% of	total cover:	3.5%	
Woody Vine Stratum (Plot size: 20'x20') 1. Smilax rotundifolia	10%	VEO	E40	
· ·	10 /0	YES	<u>FAC</u>	
2				
3				
4				
5				Hydrophytic
	10%	= Total Cov	er	Vegetation
50% of total cover:5%	20% of	total cover:	2%	Present? Yes No
Remarks: (Include photo numbers here or on a separate s	heet.)			•

Sampling Point: DP-13, UPL

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist) %	Type ¹ Loc ²	Texture		Remarks	
0-4	10YR 4/3	100	Color (Illoist) /6	Type Loc			Remarks	
	•				Sandy Loam			
4-18	10YR 5/6	100			Sandy C. Loam			
	-							
		-						
		-						
					2			
	oncentration, D=Dep Indicators:	oletion, RM=	Reduced Matrix, MS=Masked S	and Grains.	² Location: PL=	=Pore Lining, ors for Probl		lria Caila ³ .
•			Doub Conford (C7)				-	
_ Histosol	oipedon (A2)		Dark Surface (S7)Polyvalue Below Surface	(CO) /MI DA 1/17		m Muck (A10 ast Prairie Re		1)
Flistic Ep Black Hi			Thin Dark Surface (S9) (. , .	· —	MLRA 147, 1		
	n Sulfide (A4)		Loamy Gleyed Matrix (F2			dmont Flood		F19)
	Layers (A5)		Depleted Matrix (F3)	-,		MLRA 136, 1		,
	ick (A10) (LRR N)		Redox Dark Surface (F6))		ry Shallow Da	•	(TF12)
	d Below Dark Surfac	ce (A11)	Depleted Dark Surface (F	=7)	Oth	ner (Explain ir	n Remarks)	
	ark Surface (A12)		Redox Depressions (F8)					
	lucky Mineral (S1) (LRR N,	Iron-Manganese Masses	(F12) (LRR N,				
	147, 148)		MLRA 136)	LDA 420 400\	31	-46		
	edox (S5)		Umbric Surface (F13) (M Piedmont Floodplain Soil			ators of hydro		
-	Matrix (S6)		Red Parent Material (F21			and hydrology ss disturbed o		
	_ayer (if observed)	:	Red I drefit Material (I 2) (MEICA 121, 14		oo diotarboa t	or problema	
Type:	, (,							
Depth (inc					Hydric Soil P	resent? Y	es	No ×
. ,					Trydric Con 1	TOSCIIC: I		
emarks:								

Project/Site: Cumberland	County Property	Citv/C	county: Cumberlar	nd County	Sampling Date: 4/11/2018		
Applicant/Owner: CWV, LLC; of					Sampling Point: DP-14		
Investigator(s): Hannah L.		dwin Section	on, Township, Range: _	Tax Map # 37-	Gampling Forms		
• · · · <u> </u>					Slope (%):0-2%		
					Datum:		
Soil Map Unit Name: Pacole		at	-	NWI classific			
Are climatic / hydrologic condi		for this time of year?					
			es No	(If no, explain in F	present? Yes X No		
Are Vegetation, Soil							
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (if needed,	, explain any answe	ers in Remarks.)		
SUMMARY OF FINDIN	GS – Attach site	map showing san	npling point locat	ions, transects	s, important features, etc.		
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area				
Hydric Soil Present?	Yes X		within a Wetland?	Yes X	No		
Wetland Hydrology Present?	Yes X						
Remarks:							
					ļ		
Data point was taken	next to flag M-247.						
HYDROLOGY							
Wetland Hydrology Indicat	oral			Socondary India	otoro (minimum of two required)		
		alcall that annly		-	ators (minimum of two required)		
Primary Indicators (minimum			D14)	· · · · · · · · · · · · · · · · · · ·	Cracks (B6)		
Surface Water (A1)		_ True Aquatic Plants (Sparsely Vegetated Concave Surface (B8)X Drainage Patterns (B10)			
X High Water Table (A2)		_ Hydrogen Sulfide Od		_			
Saturation (A3)		_ Oxidized Rhizosphere	= : :				
Water Marks (B1)		_ Presence of Reduced			Water Table (C2)		
Sediment Deposits (B2)		_ Recent Iron Reductio		Crayfish Bu			
Drift Deposits (B3)		_ Thin Muck Surface (C			/isible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		_ Other (Explain in Rer	narks)	Stunted or S X Geomorphic	Stressed Plants (D1)		
Iron Deposits (B5) Inundation Visible on Ae	rial Imagary (R7)			Shallow Aqu			
X Water-Stained Leaves (I					aphic Relief (D4)		
Aquatic Fauna (B13)	<i>)</i> (60			FAC-Neutra			
				I AC-Neulla	r rest (D3)		
Field Observations:	vaa Na X	, Depth (inches):					
Surface Water Present?							
Water Table Present?		Depth (inches): 6"			· · · · · · · · · · · · · · · · · · ·		
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	Wetland	Hydrology Prese	nt? Yes X No		
Describe Recorded Data (str	eam gauge, monitoring	well, aerial photos, pre	vious inspections), if a	vailable:			
·					ļ		
Remarks:							

/EGETATION (Five Strata) – Use scientific na	mes of	olants.		Sampling Point: DP-14
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species
1. Betula nigra	20%	YES	FACW	That Are OBL, FACW, or FAC: 6 (A)
2. Acer rubrum	20%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
6.				That Ale OBE, FACW, OF FAC.
<u> </u>	40%	= Total Cove		Prevalence Index worksheet:
200/				Total % Cover of: Multiply by:
50% of total cover: 20%	20% of	total cover:	070	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20'				FACW species x 2 =
1. Lindera benzoin	30%	YES	FAC	FAC species x 3 =
2. Betula nigra	10%	YES	FACW	FACU species x 4 =
3				
4				UPL species x 5 =
5				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
0	40%	= Total Cove		
2007				Hydrophytic Vegetation Indicators:
50% of total cover: 20%	20% of	total cover:	8%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
0		Total Cove		be present, unless disturbed or problematic.
		= Total Cove	2 1	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	10%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
				Harb All barbassassa (non woods) plants including
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Trocay time 7 in needy times, regulated of neighb
	10%	= Total Cove	er	
50% of total cover: 5%	20% of	total cover:	2%	
Woody Vine Stratum (Plot size: 20'x20')	<u> </u>	_		
1 Vitis riparia	10%	YES	FACW	
2.				
- -				
3				
4				
5				Hydrophytic
	10%	= Total Cove	er	Vegetation
50% of total cover: _ 5%	20% of	total cover:	2%	Present? Yes X No
				
Remarks: (Include photo numbers here or on a separate si	neet.)			

SOIL Sampling Point: DP-14

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	the absenc	e of indica	itors.)	
Depth	Matrix			x Feature	s					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	_	Remarks	S
0-4	10YR 5/2	100					Sandy Lo	am		
4-18	10YR 6/2	80	5YR 5/8	20	C	PL	Sandy Loa	m		
										_
								_		
	-							_		
								_		
	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Masked	d Sand Gra	ains.			ning, M=Matri	
Hydric Soil	Indicators:						Indio	cators for	Problematic I	Hydric Soils³:
Histosol			Dark Surface	. ,					(A10) (MLRA	•
	pipedon (A2)		Polyvalue Be				148)		rie Redox (A16	6)
	istic (A3)		Thin Dark Su			47, 148)			147, 148)	(=.5)
	en Sulfide (A4)		Loamy Gleye		(F2)				Floodplain Soil	ls (F19)
	d Layers (A5)		X Depleted Ma		-c\			•	136, 147)	oo (TC10)
	uck (A10) (LRR N) d Below Dark Surface	Δ(Δ11)	Redox Dark Depleted Da						ow Dark Surfa Iain in Remark	
	ark Surface (A12)	C (A11)	Redox Depre					Otrici (Exp	an in Keman	(3)
	Mucky Mineral (S1) (L	RR N,	Iron-Mangan			LRR N,				
	A 147, 148)		MLRA 13		` , ,					
	Gleyed Matrix (S4)		Umbric Surfa	ace (F13)	(MLRA 13	6, 122)	³ ln	dicators of	hydrophytic ve	egetation and
Sandy F	Redox (S5)		Piedmont Flo					etland hyd	rology must be	e present,
	d Matrix (S6)		Red Parent I	Material (F	21) (MLR	A 127, 147	7) u	nless distu	rbed or proble	matic.
Restrictive	Layer (if observed):									
Type:										
Depth (in	ches):						Hydric So	il Present	? Yes <u> </u>	No
Remarks:							•			

Project/Site: Cumberland C	County Property	City/C	County: Cumberlar	nd County	Sampling Date: 4/11/2018		
Applicant/Owner: CWV, LLC; c	/o James H. Martin		,		Sampling Point: <u>DP-14, UPL</u>		
Investigator(s): Hannah L. Mi	ller	Section	on, Township, Range: _	Tax Map #45-A			
• ',	· Terrace	L ocal rel	ief (concave_convex_n	one).	Slope (%): 1-3%		
Subregion (LRR or MLRA): n/a					olopo (70):		
Soil Map Unit Name: Pacolet \			Long		cation: UPL		
Are climatic / hydrologic condition		ur this time of year?	/os X No	(If no, explain in F			
Are Vegetation, Soil					present? Yes X No		
				, explain any answ			
Are Vegetation, Soil	, or Hydrology	naturally problem	alic? (ii needed	, explain any answe	ers in Remarks.)		
SUMMARY OF FINDING	S – Attach site m	ap showing san	npling point locat	ions, transects	s, important features, etc.		
Hydrophytic Vegetation Presen	t? Yes	No_X	Is the Sampled Area	i			
Hydric Soil Present?	Yes		within a Wetland?		No <u> </u>		
Wetland Hydrology Present?	Yes						
Remarks:							
		_					
Data point was taken ad	jacent to flag M-24	· / .					
HYDROLOGY							
Wetland Hydrology Indicators	<u> </u>			Secondary Indic	ators (minimum of two required)		
Primary Indicators (minimum of		(all that apply)		Surface Soi			
	•		(D14)				
Surface Water (A1)		True Aquatic Plants (egetated Concave Surface (B8)		
High Water Table (A2) Saturation (A3)		Hydrogen Sulfide Od	es on Living Roots (C3)	Drainage Patterns (B10) Roots (C3) Moss Trim Lines (B16)			
Water Marks (B1)		Presence of Reduce	-	Dry-Season Water Table (C2)			
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Bu			
Sediment Deposits (B2) Drift Deposits (B3)		Thin Muck Surface (/isible on Aerial Imagery (C9)		
· · · ·		Other (Explain in Rer			Stressed Plants (D1)		
Algal Mat or Crust (B4) Iron Deposits (B5)		Other (Explain in Nei	ilaiks)		Position (D2)		
Inundation Visible on Aeria	ıl İmagery (B7)			Shallow Aqu			
Water-Stained Leaves (B9)	• • • •				raphic Relief (D4)		
Aquatic Fauna (B13)	,			FAC-Neutra	• • • •		
Field Observations:				1710 1104114			
	Yes NoX_	Denth (inches):					
	Yes No _X						
	Yes No _X			Hydrology Proce	nt? Yes No X		
(includes capillary fringe)	res INO	Deptif (inches).	welland	nyurology Frese	III! Tes NO		
Describe Recorded Data (strea	m gauge, monitoring w	vell, aerial photos, pre	evious inspections), if av	vailable:			
Remarks:							

/EGETATION (Five Strata) – Use scientific na	mes of p	olants.		Sampling Point: DP-14, UPL
201.001	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: _20'x20')	% Cover	Species?		Number of Dominant Species
1. Liriodendron tulipfera	30%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Fagus grandifolia	30%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Descent of Dominant Chaping
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)
6				- '
	60%	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: 30%				Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20 /6 01	iolai covei.		OBL species 0 x 1 = 0
				FACW species <u>0</u> x 2 = <u>0</u>
1				FAC species <u>20</u> x 3 = <u>60</u>
2				FACU species <u>80</u> x 4 = <u>320</u>
3				UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 380 (B)
5				
6				Prevalence Index = B/A = 3.80
	:	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	2070 0.	total cover.		2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	=	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tool Woods dealers and dealers and dealers
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1. Polystichum acrostichoides	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Continue Manda de man
0				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
				than 3 in. (7.6 cm) DBH.
4				Character and address of the control
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Woody vine - All woody vines, regardless of height.
	20% :	= Total Cov	er	
50% of total cover: 10%	20% of	total cover:	4%	
Woody Vine Stratum (Plot size: 20'x20')			. , ,	
1. Smilax rotundifolia	20%	YES	FAC	
·· ·				
2				
3				
4				
5				Hydrophytic
	20%:	= Total Cov	er	Vegetation
50% of total cover:10%	<u>6</u> 20% of	total cover:	4%	Present? Yes No_X
Remarks: (Include photo numbers here or on a separate sh				<u> </u>
,	,			

Sampling Point: DP-14, UPL

Depth	Matrix		needed to document the indicator or cont Redox Features	
(inches)	Color (moist)	%	Color (moist) % Type ¹ Loc ²	
0-6	10YR 4/2	100		Sandy Loam_
6-14	10YR 6/4	100		Sandy Loam
14-18	10YR 6/6	100		Sandy C. Loam
	-			
	-			
1= 0 0				21
Hydric Soil I		pletion, RIVI=R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Below Surface (S8) (MLRA 1	
Black Hi			Thin Dark Surface (S9) (MLRA 147, 148	· · · · · · · · · · · · · · · · · · ·
Hydroge	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ck (A10) (LRR N)	(0.4.4)	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	d Below Dark Surfa ark Surface (A12)	ce (A11)	Depleted Dark Surface (F7)Redox Depressions (F8)	Other (Explain in Remarks)
	lucky Mineral (S1) (LRR N.	Iron-Manganese Masses (F12) (LRR N,	
	147, 148)	(=,	MLRA 136)	
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Floodplain Soils (F19) (MLRA	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127,	147) unless disturbed or problematic.
	_ayer (if observed)):		
Type:			<u> </u>	
	ches):		_	Hydric Soil Present? Yes No X
Remarks:				

Project/Site: Cumberland County Property City/C	County: Cumberland County Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o James H. Martin	State: VA Sampling Point: DP-15
Investigator(s): Hannah L. Miller Section	on, Township, Range: Tax Map # 45-2-2-B
Landform (hillslope, terrace, etc.): Floodplain Local rel	ief (concave, convex, none): Slope (%): 2-4%
	Long: -78.110977548 Datum:
Soil Map Unit Name: Helena sandy loam	NWI classification: R3
Are climatic / hydrologic conditions on the site typical for this time of year? Y	
Are Vegetation, Soil, or Hydrology significantly distur	
Are Vegetation, Soil, or Hydrology naturally problems	
, con, or rijurciogy naturally problem	(ii nocaca, oxplain any anomore in remaine.)
SUMMARY OF FINDINGS – Attach site map showing san	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area
Hydric Soil Present? Yes X No	within a Wetland? Yes X No
Wetland Hydrology Present? Yes X No	
Remarks:	
Data point was taken next to flag J-47.	
Bata point was taken next to hag o m.	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plants (
X High Water Table (A2) Hydrogen Sulfide Od	
Saturation (A3) Oxidized Rhizospher	_ · · · · · · · · · · · · · · · · · · ·
Water Marks (B1) Presence of Reduced	
Sediment Deposits (B2) Recent Iron Reduction	
Drift Deposits (B3) Thin Muck Surface (0	
Algal Mat or Crust (B4) Other (Explain in Rer	marks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	X Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
X Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes NoX Depth (inches):	
Water Table Present? Yes X No Depth (inches): 6"	
Saturation Present? Yes NoX_ Depth (inches):	Wetland Hydrology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	vious inspections) if available:
Describe Recorded Data (stream gauge, monitoring well, aerial priotos, pre	vious inspections), il available.
Devente	
Remarks:	

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-15
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?	Status	Number of Dominant Species
1. Carpinus caroliniana	15%	YES	FAC	That Are OBL, FACW, or FAC: 6 (A)
2. Acer rubrum	15%	YES	FAC	
		· 		Total Number of Dominant Species Across All Strata: 6 (B)
		· 		Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6		· 		
	30%	= Total Cov	er	Prevalence Index worksheet:
50% of total cover:15%				Total % Cover of: Multiply by:
	20% 01	iolai covei.		OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')	000/	VEO	E A O\A/	FACW species x 2 =
1. Betula nigra	20%	YES	FACW	FAC species x 3 =
2. Carpinus caroliniana	20%	YES	FAC	FACU species x 4 =
3				
4				UPL species x 5 =
		· 		Column Totals: (A) (B)
5				December of Last 1974
6	400/			Prevalence Index = B/A =
	40%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 20%	20% of	total cover:	_8%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				✓ 2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3		. 		Problematic Hydrophytic Vegetation ¹ (Explain)
4				1 Tobicinatio Trydrophytic Vegetation (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
		= Total Cov	or	be present, unless disturbed or problematic.
				Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1 Juncus effusus	15%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Capling Woody plants, evaluding woody vines
2				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9			<u> </u>	plants, except woody vines, less than approximately 3
		-		ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11	450/	· 		, , ,
	15%	= Total Cov	er	
50% of total cover: 7.5	% 20% of	total cover:	3%	
Woody Vine Stratum (Plot size: 20'x20')				
4 Vitie rinaria	15%	YES	FACW	
2				
3				
4				
5.			<u></u>	
		= Total Cov	or	Hydrophytic
				Vegetation Present? Yes X No
50% of total cover:	20% of	total cover:		103 <u>/</u> , 140
Remarks: (Include photo numbers here or on a separate sl	heet.)			

SOIL Sampling Point: DP-15

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	the absenc	e of indica	ators.)	
Depth	Matrix			x Feature	s					
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type'	Loc ²	<u>Texture</u>		Remarks	S
0-5	10YR 3/3	100					Sandy Lo	am		
5-18	10YR 7/2	90	7.5YR 5/6	10	С	PL_	Sandy Loa	ım		
	_									_
								-		
				-	· 					
	-									
	-				· -					
	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Masked	d Sand Gra	ains.			ining, M=Matri	
Hydric Soil									Problematic I	-
Histosol			Dark Surface	. ,					(A10) (MLRA	•
	pipedon (A2)		Polyvalue Be				148)		rie Redox (A16	6)
	istic (A3)		Thin Dark Su			47, 148)			147, 148) Elecalada (Cail	I- (F40)
	en Sulfide (A4) d Layers (A5)		Loamy GleyeDepleted Ma		(FZ)		_		Floodplain Soil 136, 147)	IS (F19)
	uck (A10) (LRR N)		Redox Dark		- 6)				ow Dark Surfa	ce (TF12)
	d Below Dark Surface	e (A11)	Depleted Da						olain in Remark	
	ark Surface (A12)	- (Redox Depre				_			-,
	Mucky Mineral (S1) (L	RR N,	Iron-Mangan			LRR N,				
MLR	A 147, 148)		MLRA 13	6)						
	Gleyed Matrix (S4)		Umbric Surfa						hydrophytic v	-
-	Redox (S5)		Piedmont Flo					-	Irology must be	
	d Matrix (S6)		Red Parent I	Material (F	(MLR	A 127, 147	7) u	nless distu	rbed or proble	matic.
	Layer (if observed):									
Type:										
Depth (in	ches):						Hydric So	il Present	?Yes_X	No
Remarks:										

Project/Site: Cumberland Count	y Property	City/C	County: Cumberlar	nd County	Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o Jar			,		Sampling Point: <u>DP-15, UPL</u>
Investigator(s): Hannah L. Miller		Section	on, Township, Range: _	Tax Map #45-2	-2-B
Landform (hillslope, terrace, etc.): Hill	Islope/Toe of Slo	ope Local rel	ief (concave, convex, n	one):	Slope (%): 3-5%
Subregion (LRR or MLRA): n/a					
Soil Map Unit Name: Helena sandy				NWI classific	
Are climatic / hydrologic conditions on		this time of year? Y		(If no, explain in F	
Are Vegetation, Soil, or			bed? Are "Norm		present? Yes X No
Are Vegetation, Soil, or				, explain any answe	
, con, or	Trydrology	naturally problem	dio: (ii fiecaea	, explain any anowe	To in Normanio.
SUMMARY OF FINDINGS - A	Attach site ma	ap showing san	npling point locat	ions, transects	s, important features, etc.
Hydrophytic Vegetation Present?	Ves	No_X			
Hydric Soil Present?	Yes	No X	Is the Sampled Area within a Wetland?	l Yes	No <u>X</u>
Wetland Hydrology Present?	Yes	No X	Within a Wettana.	100	
Remarks:	100	110 <u>77 </u>			
Data point was taken adjacer	nt to flag J-47.				
LIVEROLOGY					_
HYDROLOGY				Cocondon India	atora (minimum of two required)
Wetland Hydrology Indicators:		all that amount o			ators (minimum of two required)
Primary Indicators (minimum of one is			(D4.4)	Surface Soil	
Surface Water (A1)		rue Aquatic Plants (getated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Od		Drainage Pa	
Saturation (A3)			es on Living Roots (C3)		
Water Marks (B1) Sediment Deposits (B2)		Presence of Reduced	on in Tilled Soils (C6)	Crayfish Bur	Water Table (C2)
Orift Deposits (B3)		Thin Muck Surface (isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Rer			itressed Plants (D1)
Iron Deposits (B5)	_ `	Z (=xp.a to.			Position (D2)
Inundation Visible on Aerial Imag	ery (B7)			Shallow Aqu	
Water-Stained Leaves (B9)	, ,				aphic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	• • •
Field Observations:					
Surface Water Present? Yes	$_{No}$ \times	Depth (inches):			
		Depth (inches):			
		Depth (inches):		Hydrology Presei	nt? Yes No X
(includes capillary fringe)					
Describe Recorded Data (stream gau	ge, monitoring we	ell, aerial photos, pre	evious inspections), if av	vailable:	
Remarks:					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-15, UPL
001.001	Absolute	Dominant	Indicator	Dominance Test worksheet:
	% Cover	Species?		Number of Dominant Species
1. Liriodendron tulipfera	20%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Fagus grandifolia	25%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Barrant of Barrian of Caracina
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 16% (A/B)
6.				- , ,
	45%	= Total Cove	 er	Prevalence Index worksheet:
50% of total cover: _ 22.5°	<u></u>	total accord	9%	Total % Cover of: Multiply by:
	<u>/ 2</u> 0% 01	total cover.		OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20')	4.50/	\/=0	E40	FACW species <u>0</u> x 2 = <u>0</u>
		YES		FAC species <u>15</u> x 3 = <u>45</u>
2				FACU species 60 x 4 = 240
3				UPL species 25 x 5 = 125
4				Column Totals: <u>100</u> (A) <u>410</u> (B)
5				
6				Prevalence Index = B/A = 4.10
	15%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover: 7.5%	, 9 20% of	total cover:	3%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	15%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2. Sanguinaria canadensis	10%	YES	UPL	Sapling – Woody plants, excluding woody vines,
3. Oxalis violacea	15%	YES	UPL	approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				
	40%	= Total Cove	er	
50% of total cover: 20%	20% of	total cover:	8%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cove		Vegetation Present? Yes No
50% of total cover:	20% of	total cover:		Present? Yes No
Remarks: (Include photo numbers here or on a separate sh	neet.)			

Sampling Point: DP-15, UPL

Depth	Matrix		Redox Features	-2 December
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Lo	C Texture Remarks
0-4	10YR 5/2			Sandy Loam_
4-18	10YR 6/3	100		Sandy Loam
				 -
-				
				
_				
		pletion, RM=R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
dric Soil I	ndicators:			Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Below Surface (S8) (MLRA	
_ Black His			Thin Dark Surface (S9) (MLRA 147, 1	
	n Sulfide (A4) Layers (A5)		Loamy Gleyed Matrix (F2)Depleted Matrix (F3)	Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	Below Dark Surfa	ce (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	rk Surface (A12)	,	Redox Depressions (F8)	
	ucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR	N,
MLRA	147, 148)		MLRA 136)	
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 12	
	edox (S5)		Piedmont Floodplain Soils (F19) (MLI	
	Matrix (S6)		Red Parent Material (F21) (MLRA 12	7, 147) unless disturbed or problematic.
	ayer (if observed):		
Type:			<u> </u>	
			<u> </u>	Hydric Soil Present? Yes No X
	:hes):			
Depth (inc	:hes):			
Depth (inc	hes):			
Depth (inc	:hes):			
Depth (inc	:hes):			
Depth (inc	hes):			
Depth (inc	ches):			
Depth (inc	ches):			
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	ehes):			
Depth (inc	ehes):			
Depth (inc	ehes):			
Depth (inc	ehes):			
Depth (inc	ehes):			
Depth (inc	ehes):			

Project/Site: Cumberland County	/ Property	City/County: Cumberland	d County	Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o James F	1. Martin			Sampling Point: DP-16
Investigator(s): Hannah L. Miller		Section, Township, Range:	Tax Map # 45-2	
Landform (hillslope, terrace, etc.): Floo	odplain I c	ocal relief (concave, convex, no	nne).	Slone (%): 2-4%
Subregion (LRR or MLRA):				
Soil Map Unit Name: Helena sandy lo				cation: PFO
Are climatic / hydrologic conditions on the		ear? Ves X No	(If no, explain in R	
Are Vegetation, Soil, or l		v disturbed? Are "Norma		present? Yes X No
Are Vegetation, Soil, or I			explain any answe	
Are vegetation, on, or i	TydrologyTiatdrally pr	oblematic: (ii fleeded,	explain any answe	is in itemarks.)
SUMMARY OF FINDINGS – A	ttach site map showing	g sampling point location	ons, transects	s, important features, etc.
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area		
Hydric Soil Present?	Yes X No		$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	Yes <u>X</u> No	_		
Remarks:				
Data point was taken poyt to f	log LEO			
Data point was taken next to f	ag J-52.			
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is	required; check all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	True Aquatic F	Plants (B14)	Sparsely Ve	getated Concave Surface (B8)
X High Water Table (A2)	Hydrogen Sulf		X Drainage Pa	
X Saturation (A3)		ospheres on Living Roots (C3)		
Water Marks (B1)	Presence of R			Water Table (C2)
Sediment Deposits (B2)	Recent Iron Re	eduction in Tilled Soils (C6)	Crayfish Bur	rows (C8)
Drift Deposits (B3)	Thin Muck Sur	rface (C7)	Saturation V	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain	in Remarks)	Stunted or S	tressed Plants (D1)
Iron Deposits (B5)			X Geomorphic	Position (D2)
Inundation Visible on Aerial Image	ery (B7)		Shallow Aqu	itard (D3)
X Water-Stained Leaves (B9)			Microtopogra	aphic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)
Field Observations:				
	X No Depth (inches			
	X No Depth (inches			
	X No Depth (inches	s): 6" Wetland	Hydrology Preser	nt? Yes <u> </u>
(includes capillary fringe) Describe Recorded Data (stream gauge	ne monitoring well serial phot	os previous inspections) if av	ailahla:	
Describe Recorded Data (Stream gaug	e, monitoring well, aerial prior	.os, previous inspections), ii ava	allable.	
Remarks:				
Remarks.				

/EGETATION (Five Strata) – Use scientific na	mes of	olants.		Sampling Point: DP-16
· · · · · · · · · · · · · · · · · · ·	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species _
1. Betula nigra	15%	YES	FAC	That Are OBL, FACW, or FAC: 7 (A)
2. Liquidambar styraciflua	10%	YES	FAC	Total Number of Deminent
3				Total Number of Dominant Species Across All Strata: 7 (B)
4				(2)
5				Percent of Dominant Species That Are OBL FACW or FAC: 100% (A/B)
				That Are OBL, FACW, or FAC: 100% (A/B)
6	25%	Total Cau		Prevalence Index worksheet:
		= Total Cove		Total % Cover of: Multiply by:
50% of total cover: 12.5	$\frac{\%}{}$ 20% of	total cover:	5%	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')				FACW species x 2 =
1. Betula nigra	10%	YES	FACW	
2. Acer rubrum	20%	YES	FAC	FAC species x 3 =
3. Carpinus caroliniana	15%	YES	FAC	FACU species x 4 =
				UPL species x 5 =
·				Column Totals: (A) (B)
5				
6	450/			Prevalence Index = B/A =
	45%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover: 22.5°	<u>%</u> 20% of	total cover:	9%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'	_	-		✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	:	= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')	2070 01	10101 00101.		Tree – Woody plants, excluding woody vines,
Delta a describada a	15%	YES	OBL	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
-				(* 10 om) of fallgor in alameter at 2 oact 110 grit (2 2 m).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				and the (1.0 only BB1).
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11	150/			
	1370	= Total Cove	er	
50% of total cover:7.5	<u>%</u> 20% of	total cover:	3%	
Woody Vine Stratum (Plot size: 20'x20')				
1. Vitis riparia	15%	YES	FACW	
2				
3				
4				
5				Hydrophytic
	15%	= Total Cove	er	Vegetation
50% of total cover: 7.5%				Present? Yes X No
Remarks: (Include photo numbers here or on a separate sl				1
Remarks. (include prioto numbers here of on a separate si	ieet.)			

SOIL Sampling Point: DP-16

Profile Desc	ription: (Describe	to the dep	th needed to docur	nent the i	ndicator	or confirm	the absence of indicators.)
Depth Matrix			Redo	x Features	3		
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-5	10YR 3/3	100					Sandy Loam
5-18	10YR 7/2	85	7.5YR 5/6	15	С	PL	Sandy Loam
		· ——					
	-						
		· ——					
1 _{Turnou} C. C.		lation DM	Doduced Metrix MS	- Maakad	Cond Cr		21 costions DI Doro Lining M Motris
Hydric Soil		letion, Rivi	=Reduced Matrix, MS	s=iviasked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
-			Davis Courters	(07)			
Histosol	oipedon (A2)		Dark Surface		oo (CO) /N /	II D A 447	2 cm Muck (A10) (MLRA 147)
			Polyvalue Be Thin Dark Su				148) Coast Prairie Redox (A16) (MLRA 147, 148)
Black Hi	en Sulfide (A4)		Loamy Gleye			47, 140)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Z Depleted Mar	,	1 2)		(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark	. ,	·6)		Very Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Dar	•	,		Other (Explain in Remarks)
	ark Surface (A12)	- ()	Redox Depre				
	lucky Mineral (S1) (L	RR N,	Iron-Mangan			_RR N,	
MLRA	A 147, 148)		MLRA 13	6)			
	Bleyed Matrix (S4)		Umbric Surfa				³ Indicators of hydrophytic vegetation and
	tedox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR .	A 127, 147	7) unless disturbed or problematic.
Restrictive I	_ayer (if observed):						
Type:							
Depth (inc	ches):						Hydric Soil Present? Yes X No No
Remarks:							

Project/Site: Cumberland County	Property	City/Co	unty: Cumberlar	nd County	Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o Jame	s H. Martin			State: VA	Sampling Point: DP-16, UPL
Investigator(s): Hannah L. Miller		Section	n, Township, Range:	Tax Map #45-2	-2-B
Landform (hillslope, terrace, etc.): Hillslo	ppe	Local relie	f (concave, convex, n	none):	Slope (%): 2-4%
Subregion (LRR or MLRA): n/a		7.554727859	Long: -	78.110749076	Datum:
Soil Map Unit Name: Helena sandy loa				NWI classific	
Are climatic / hydrologic conditions on the		time of vear? Ye		 _ (If no, explain in F	
Are Vegetation, Soil, or Hy			ed? Are "Norm		present? Yes X No
Are Vegetation, Soil, or Hy				I, explain any answe	
·	<u> </u>		`		,
SUMMARY OF FINDINGS – Att	ach site map s	showing sam	oling point locat	ions, transects	, important features, etc.
		V			
Hydrophytic Vegetation Present?	Yes No		Is the Sampled Area	a Vaa	No <u>X</u>
Hydric Soil Present? Wetland Hydrology Present?	Yes No	- X	within a Wetland?	res	No
Remarks:	165 100				
ixemarks.					
Data point was taken adjacent t	o flag J-52.				
HYDROLOGY					
Wetland Hydrology Indicators:					ators (minimum of two required)
Primary Indicators (minimum of one is re	quired; check all the	hat apply)		Surface Soil	
Surface Water (A1)		Aquatic Plants (B			getated Concave Surface (B8)
High Water Table (A2)		ogen Sulfide Odor		Drainage Pa	
Saturation (A3)			s on Living Roots (C3		
Water Marks (B1)		ence of Reduced			Water Table (C2)
Sediment Deposits (B2)			in Tilled Soils (C6)	Crayfish Bur	
Drift Deposits (B3)		Muck Surface (C7			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Othe	er (Explain in Rema	arks)		Stressed Plants (D1)
Iron Deposits (B5)	· (DZ)				Position (D2)
Inundation Visible on Aerial Imagery	(D/)			Shallow Aqu	aphic Relief (D4)
Water-Stained Leaves (B9) Aquatic Fauna (B13)				FAC-Neutral	. , ,
Field Observations:			<u> </u>	TAC-Neutra	
	NoX_ Dep	oth (inches):			
	No <u>X</u> Dep No <u>X</u> Dep				
	No <u> X </u> Dep No <u> X </u> Dep			l Hydrology Presei	nt2 Vac No Y
(includes capillary fringe)	No Deb	our (inches)	welland	i nyurology Fresei	nt? Yes No <u>X</u>
Describe Recorded Data (stream gauge	monitoring well, a	erial photos, previ	ious inspections), if a	vailable:	
Remarks:					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-16, UPL
001.001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?	Status	Number of Dominant Species
1. Liriodendron tulipfera	20%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Fagus grandifolia	10%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Barrant of Barrier of Canada
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 16% (A/B)
6.				
	30%	= Total Cov	er	Prevalence Index worksheet:
50% of total cover:15%				Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20% 01	iolai cover.		OBL species 0 x 1 = 0
4. Facus and diffelia	200/	VEC	EACH	FACW species <u>0</u> x 2 = <u>0</u>
		YES		FAC species 10 x 3 = 30
2				FACU species
3				UPL species x 5 = 100
4				Column Totals:100 (A)410 (B)
5				
6				Prevalence Index = B/A = 4.10
	20%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: _ 10%	20% of	total cover:	4%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2. Oxalis violacea	20%	YES	UPL	Sapling – Woody plants, excluding woody vines,
3.				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
				Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Trocay time 7 in woody times, regardless of meight
	40%	= Total Cov	er	
50% of total cover: 20%	20% of	total cover:	8%	
Woody Vine Stratum (Plot size: 20'x20')		•		
1. Smilax rotundifolia	10%	YES	FAC	
3				
4				
5				Hydrophytic
	10%	= Total Cov	er	Vegetation Present? Yes No
50% of total cover: 5%	20% of	total cover:	2%	Present? Yes No _ ^_
Remarks: (Include photo numbers here or on a separate sh	neet.)			I .
•	•			

Sampling Point: DP-16, UPL

Depth (i.e.)	Matrix		Redox Features	- Tooloo Barada
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc ²	
0-4	10YR 4/3			Sandy Loam_
4-10	10YR 6/3	100		Sandy Loam
10-18	10YR 6/6	100		Sandy C. Loam
	_			
		<u> </u>		
	ncentration D-De	nletion RM-F	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
ydric Soil I		epietion, Kivi=K	Reduced Matrix, MS=Masked Sand Grains.	Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Below Surface (S8) (MLRA 14	
Black His			Thin Dark Surface (S9) (MLRA 147, 148	· · · · · · · · · · · · · · · · · · ·
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ck (A10) (LRR N)	200 (111)	Redox Dark Surface (F6)	<pre> Very Shallow Dark Surface (TF12) Other (Explain in Remarks)</pre>
	l Below Dark Surfa irk Surface (A12)	ace (ATT)	Depleted Dark Surface (F7)Redox Depressions (F8)	Other (Explain in Remarks)
	lucky Mineral (S1)	(LRR N.	Iron-Manganese Masses (F12) (LRR N,	
-	147, 148)	(,	MLRA 136)	
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Floodplain Soils (F19) (MLRA	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127, 1	47) unless disturbed or problematic.
	ayer (if observed	i):		
Type:			<u> </u>	
	hac).		<u> </u>	Hydric Soil Present? Yes No X
Depth (inc	, iles)			
	nes).			
	nes).			
	nies).			
	nes).			
Depth (inc	nes).			
	ines).			

Project/Site: Cumberland	Coun	ty P	roperty	<u>y</u> City/C	County: C	umberlan	d County	Sampling Date:	4/25/2018
Applicant/Owner: CWV, LLC; o	/o James	H. Ma	artin					Sampling Poin	
Investigator(s): Hannah L.	Miller			Section	ion. Townsh	ip. Range:			
Landform (hillslope, terrace, et									e (%): 0-3%
Subregion (LRR or MLRA):n									
Soil Map Unit Name: Chewa							NWI classifi		
Are climatic / hydrologic condit							(If no, explain in F		
Are Vegetation, Soil								present? Yes >	ί _{No}
Are Vegetation, Soil				-			explain any answe		
SUMMARY OF FINDIN									atures, etc.
			. ~	·					
Hydrophytic Vegetation Pres	ent?			No		mpled Area	v X	No	
Hydric Soil Present?			Yes X		within a \	vetiand?	res	NO	
Wetland Hydrology Present?			Yes X	No					
Remarks:									
Data point was taken	next to	flag	L-9.						
		_							
HYDROLOGY									
Wetland Hydrology Indicat	ors:						Secondary Indic	ators (minimum of t	wo required)
Primary Indicators (minimum	of one i	s req	uired; ch	eck all that apply)			Surface Soil	Cracks (B6)	
X Surface Water (A1)				True Aquatic Plants ((B14)			getated Concave S	Surface (B8)
X High Water Table (A2)				Hydrogen Sulfide Od			X Drainage Pa	-	, ,
X Saturation (A3)				Oxidized Rhizospher		Roots (C3)			
Water Marks (B1)				Presence of Reduced	-	, ,		Water Table (C2)	
Sediment Deposits (B2)				Recent Iron Reduction		Soils (C6)	X Crayfish Bu		
Drift Deposits (B3)				Thin Muck Surface (0		` ,	-	/isible on Aerial Ima	agery (C9)
Algal Mat or Crust (B4)				Other (Explain in Rer				Stressed Plants (D1	
Iron Deposits (B5)							X Geomorphic	Position (D2)	
Inundation Visible on Ae	rial Imaç	gery (B7)				Shallow Aqu	uitard (D3)	
X Water-Stained Leaves (E	39)							aphic Relief (D4)	
Aquatic Fauna (B13)							FAC-Neutra		
Field Observations:									
Surface Water Present?	Yes_	X	No	Depth (inches):0"	"				
Water Table Present?				Depth (inches): 6"					
Saturation Present?				Depth (inches): 8"		Wetland	Hydrology Prese	nt? Yes X	No
(includes capillary fringe)									
Describe Recorded Data (str	eam gau	ıge, n	nonitorin	ig well, aerial photos, pre	evious inspe	ections), if av	ailable:		ļ
Remarks:									

/EGETATION (Five Strata) – Use scientific na	ames of p	plants.		Sampling Point: DP-17
- 20'v20'	Absolute	Dominant I		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>20'x20'</u>)		Species?		Number of Dominant Species That Are OBL_FACW_or FAC: 2 (A)
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant Species Across All Strata: 2 (B)
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
		= Total Cove		Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover:_		OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')	100/	VEC	540	FACW species x 2 =
1. Carpinus caroliniana	10%		FAC	FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				
6	400/			Prevalence Index = B/A =
		= Total Cove		Hydrophytic Vegetation Indicators:
50% of total cover: 5%	20% of	total cover:_	2%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				∠ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				Problematic Prydrophytic Vegetation (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:_		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	90%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb - All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine All woody vines regardless of height
11				Woody vine – All woody vines, regardless of height.
	90%	= Total Cove	er	
50% of total cover: 45°	<u>%</u> 20% of	total cover:_	18%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				
<u>. </u>		= Total Cove		Hydrophytic
500 2 42 4				Vegetation Present? Yes X No No No No No No No
50% of total cover:		total cover:_		
Remarks: (Include photo numbers here or on a separate s	heet.)			

SOIL Sampling Point: DP-17

(inches)	Matrix			x Features			
	Color (moist)	%	Color (moist)	% Type	1 Loc ²	Texture	Remarks
0-5	10YR 3/3	100		·		Sandy Loam	
5-18	10YR 7/1	80	7.5YR 5/4	20 C	<u>PL</u>	Sandy Loam	
	-						
			-				
			-				
1- 0.0						21 11 12 12	
Hydric Soil I		pletion, RM	=Reduced Matrix, MS	S=Masked Sand	Grains.	² Location: PL=Pore L	Lining, M=Matrix. Problematic Hydric Soils ³ :
-			Dork Surface	(07)			
Histosol	ipedon (A2)		Dark Surface	elow Surface (S8)	(MI DA 147		k (A10) (MLRA 147) irie Redox (A16)
Black His				urface (S9) (MLR			147, 148)
	n Sulfide (A4)			ed Matrix (F2)	1 147, 140)		Floodplain Soils (F19)
	Layers (A5)		X Depleted Ma	, ,			136, 147)
	ck (A10) (LRR N)		Redox Dark				low Dark Surface (TF12)
	Below Dark Surfa	ce (A11)		rk Surface (F7)			olain in Remarks)
	ark Surface (A12)		Redox Depre	essions (F8)			
	lucky Mineral (S1)	(LRR N,		ese Masses (F12) (LRR N,		
	147, 148)		MLRA 13	•			
	leyed Matrix (S4)			ace (F13) (MLRA			f hydrophytic vegetation and
	edox (S5)			oodplain Soils (F1			drology must be present,
	Matrix (S6)		Red Parent N	Material (F21) (MI	_RA 127, 147	unless disti	urbed or problematic.
	ayer (if observed):					
Type:							Y
	ches):					Hydric Soil Present	? Yes <u>X</u> No
Remarks:							

Project/Site: Cumberland Cour	nty Property	City/County: Cumb	perland County	Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o Ja				Sampling Point: <u>DP-17, UPL</u>
Investigator(s): Hannah L. Miller		Section, Township, Ra		 ?-2-B
Landform (hillslope, terrace, etc.): Hi				
Subregion (LRR or MLRA): n/a				
Soil Map Unit Name: Chewacla and			NWI classific	
Are climatic / hydrologic conditions on		of year? Yes X No	(If no, explain in R	
Are Vegetation, Soil, c				present? Yes X No
Are Vegetation, Soil, c			needed, explain any answe	
, co, co,	<u></u>	, p. 62.16.11.41.11	ocaca, explain any allene	
SUMMARY OF FINDINGS -	Attach site map shov	ving sampling point	locations, transects	, important features, etc.
Hydrophytic Vegetation Present?	Yes No_X	la tha Cannala	1 4	
Hydric Soil Present?	Yes No_X		d Area and? Yes	No <u>X</u>
Wetland Hydrology Present?	Yes No X			
Remarks:				
Data point was taken adjace	int to flag L-9.			
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one	is required; check all that ar	nnly)	Surface Soil	
Surface Water (A1)	-	itic Plants (B14)		getated Concave Surface (B8)
High Water Table (A2)		Sulfide Odor (C1)	Drainage Pa	
Saturation (A3)	· · · · ·	Rhizospheres on Living Roc		
Water Marks (B1)		of Reduced Iron (C4)		Water Table (C2)
Sediment Deposits (B2)		n Reduction in Tilled Soils		
Drift Deposits (B3)		Surface (C7)		sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		olain in Remarks)		tressed Plants (D1)
Iron Deposits (B5)				Position (D2)
Inundation Visible on Aerial Ima	gery (B7)		Shallow Aqui	itard (D3)
Water-Stained Leaves (B9)			Microtopogra	aphic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)
Field Observations:				
	No X Depth (in			
	No X Depth (in	T		
Saturation Present? Yes	No _X_ Depth (in	ches): W	etland Hydrology Presen	nt? Yes No <u>X</u>
(includes capillary fringe) Describe Recorded Data (stream ga	unge monitoring well aerial	nhotos previous inspection	us) if available:	
Describe Neserada Data (etroam ga	ago, mormornig won, aonar p	priotos, proviodo mopositori	o), ii availabio.	
Remarks:				
Nomano.				

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-17, UPL
201/201	Absolute	Dominant I		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	30%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Fagus grandifolia	35%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 25% (A/B)
6				Prevalence Index worksheet:
		= Total Cove		Total % Cover of: Multiply by:
50% of total cover: 32.5	<u>%</u> 20% of	total cover:_	13%	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20'				FACW species 0 x 2 = 0
1. Ilex opaca	25%	YES	FAC	FAC species <u>25</u> x 3 = <u>75</u>
2				FACU species 75 x 4 = 300
3				UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 375 (B)
5				
6				Prevalence Index = B/A = 3.75
	25%	= Total Cove	r	Hydrophytic Vegetation Indicators:
50% of total cover:12.5	5% _{20% of}	total cover:	5%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4		-		Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6		= Total Cove		be present, unless disturbed or problematic.
				Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:_		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	10%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				than 3 m. (7.0 cm) DDM.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				Woody vine - All woody vines, regardless of height.
	10%	= Total Cove	r	
50% of total cover: _5%	20% of	total cover:	2%	
Woody Vine Stratum (Plot size: 20'x20')		_		
1				
2				
3				
4 5.				
o		= Total Cove		Hydrophytic
				Vegetation Present? Yes No
50% of total cover:		total cover:_		
Remarks: (Include photo numbers here or on a separate si	heet.)			

Sampling Point: DP-17, UPL

Depth	Matrix		Redox Features	
(inches)	Color (moist)	%	Color (moist) % Type ¹ L	Loc ² Texture Remarks
0-4	10YR 5/3	100		Sandy Loam
4-18	10YR 5/6	100		Light Sandy C. Loam
	_			
		pletion, RM=Re	educed Matrix, MS=Masked Sand Grains	
Hydric Soil				Indicators for Problematic Hydric Soils ³
Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLR	· · · · · · · · · · · · · · · · · · ·
	istic (A3)		Thin Dark Surface (S9) (MLRA 147,	
	en Sulfide (A4) d Layers (A5)		Loamy Gleyed Matrix (F2)Depleted Matrix (F3)	Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	ark Surface (A12)	,	Redox Depressions (F8)	
Sandy M	Mucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRI	R N,
MLRA	A 147, 148)		MLRA 136)	
	Sleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 1	
	Redox (S5)		Piedmont Floodplain Soils (F19) (MI	
	Matrix (S6)		Red Parent Material (F21) (MLRA 1	27, 147) unless disturbed or problematic.
	Layer (if observed)):		
Type:			_	
Depth (in	ches):			Hydric Soil Present? Yes No X
Remarks:				

Project/Site: Cumberland	County Property	Citv/C	county: Cumberlan	d County	Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; of					Sampling Point: DP-18
Investigator(s): Hannah L.		Section	on Township Range		
					Slope (%): 2-4%
					Datum:
Soil Map Unit Name:				NWI classific	
Are climatic / hydrologic condit				(If no, explain in F	
Are Vegetation, Soil					present? Yes X No
Are Vegetation, Soil		- · · · · · · · · · · · · · · · · · · ·		explain any answe	
Are vegetation, 50ii	, or Hydrology	naturally problems	alic? (II needed,	explain any answe	ers in Remarks.)
SUMMARY OF FINDIN	GS – Attach site	map showing sam	pling point locati	ons, transects	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area		
Hydric Soil Present?	Yes X		within a Wetland?	$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	Yes X	No			
Remarks:					
Data naint was taken					
Data point was taken	next to flag K-80.				
HYDROLOGY					
Wetland Hydrology Indicate	ors.			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum		ack all that anniv)		-	Cracks (B6)
Surface Water (A1)		_ True Aquatic Plants (P14)		getated Concave Surface (B8)
Surface Water (A1)X High Water Table (A2)		_ Hydrogen Sulfide Od		Sparsery ve	=
Saturation (A3)		_ Trydrogen Sunde Od _ Oxidized Rhizosphere			
Water Marks (B1)		 Presence of Reduced 	-		Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Bu	
Drift Deposits (B3)		Thin Muck Surface (C		-	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		_ Other (Explain in Rer			Stressed Plants (D1)
Iron Deposits (B5)	_	_ Guioi (Explain in Itol	namoj	X Geomorphic	
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqu	
X Water-Stained Leaves (F					aphic Relief (D4)
Aquatic Fauna (B13)	20)			FAC-Neutra	
Field Observations:					1 1001 (20)
Surface Water Present?	Ves No X	C Depth (inches):			
Water Table Present?		Depth (inches): 4"			
Saturation Present?		Depth (inches):		Uvdvology Droce	nt? Yes X No
(includes capillary fringe)	res No	Depth (inches):	wetiand	nydrology Prese	nt? Yes X No
Describe Recorded Data (str	eam gauge, monitorinç	g well, aerial photos, pre	vious inspections), if av	ailable:	
Remarks:					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-18
201.001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species That Are OBL FACW or FAC: 6 (A)
1. Carpinus caroliniana		YES		That Are OBL, FACW, or FAC: 6 (A)
2				Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6		= Total Cove		Prevalence Index worksheet:
				Total % Cover of: Multiply by:
50% of total cover: <u>5%</u>	20% of	total cover:	2%	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')	25%	YES	EA C) A /	FACW species x 2 =
1. Carpinus caroliniana		YES	FACW FAC	FAC species x 3 =
2. Ilex opaca			TAC	FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				
6	40%			Prevalence Index = B/A =
		= Total Cove		Hydrophytic Vegetation Indicators:
50% of total cover: <u>20%</u>	20% of	total cover:	8%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				✓ 2 - Dominance Test is >50%
1,				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')	/			approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus		YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2. Microstegium vimineum		_YES	_FAC_	Sapling - Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				than 5 m. (7.6 cm) DBM.
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximately 3 to 20 ft (1 to 6 ff) in neight.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				, , , , ,
		= Total Cove		
50% of total cover: <u>22.5</u>	<u>%</u> 20% of	total cover:	9%	
Woody Vine Stratum (Plot size: 20'x20')				
1. Smilax rotundifolia	5%	YES	FAC	
2				
3				
4				
5				Hydrophytic
	5%	= Total Cove	er	Vegetation
50% of total cover:2.5%	<u>6</u> 20% of	total cover:	1%	Present? Yes X No
Remarks: (Include photo numbers here or on a separate s		-		<u>I</u>
Sphagnum moss present at this point.	,			

SOIL Sampling Point: DP-18

inches)	Matrix Color (moist)	%	Color (moist)	ox Features	Type ¹	Loc ²	Texture		Remarks	
0-4	10YR 4/2	100	Color (moist)	%	rype	LUC	Sandy Loai		Remarks	
	-		40) (5.0)					-		
4-18	10YR 6/2	90	10YR 6/8	10	С	PL	Sandy Loam	-		
	_									
				. <u> </u>						
		alatian DM	Dadwaad Matrix M	IC Maalaad C	`l O		2 ₁ + : DI	Dana Lini	a a M Matrix	
	oncentration, D=Del	pletion, Rivi	=Reduced Matrix, M	is=iviasked s	and Gra	ins.			ng, M=Matrix. roblematic Hy	dric Soils ³
Histosol			Dark Surfac	o (S7)					A10) (MLRA 1	
	oipedon (A2)			e (37) elow Surface	(S8) (M	I RA 147.			Redox (A16)	71)
Black Hi			Thin Dark S				=	(MLRA 14		
	en Sulfide (A4)			ed Matrix (F2		, ,	Pi		oodplain Soils	(F19)
Stratified	d Layers (A5)		X Depleted Ma	atrix (F3)				(MLRA 13	6, 147)	
	ıck (A10) (LRR N)			Surface (F6)				•	/ Dark Surface	. ,
	d Below Dark Surfac	ce (A11)		ark Surface (F	- 7)		0	ther (Expla	in in Remarks)	
	ark Surface (A12)	I DD N		essions (F8)	(E40) (1	DD N				
	Mucky Mineral (S1) (A 147, 148)	LKK N,	Iron-Mangar		(F12) (L	.KK N,				
	Gleyed Matrix (S4)		Umbric Surf	•	I RΔ 130	\$ 122\	³ Indi	cators of h	ydrophytic veg	etation and
-	Redox (S5)		Piedmont FI						logy must be p	
	Matrix (S6)			Material (F21				-	ed or problema	
	Layer (if observed)):		,					·	
SUICUVE I	,									
Type:										
Type:							Hydric Soil	Present?	Yes <u>×</u>	No
Type: Depth (inc			<u> </u>				Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (ind							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes_X	No
Туре:							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No
Type: Depth (inc							Hydric Soil	Present?	Yes X	No

Project/Site: Cumberland County Property	City/County: Cumberland County Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o James H. Martin	State: VA Sampling Point: <u>DP-18, UPL</u>
Investigator(s): Hannah L. Miller	Section, Township, Range: Tax Map # 45-A-11
	Local relief (concave, convex, none): Slope (%): 3-5%
Subregion (LRR or MLRA): n/a Lat: 37.550	
Soil Map Unit Name: Chewacla and Monocan Soils	NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time	
Are Vegetation, Soil, or Hydrology signific	\checkmark
Are Vegetation, Soil, or Hydrology natural	
Are vegetation, on Hydrology hattiral	y problematic: (if needed, explain any answers in remarks.)
SUMMARY OF FINDINGS – Attach site map show	ving sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No_X	Is the Sampled Area
Hydric Soil Present? Yes No_X	within a Wetland? Yes NoX
Wetland Hydrology Present? Yes No X	
Remarks:	
Data point was taken adjacent to flag K-80.	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that ap	· · · · · · · · · · · · · · · · · · ·
	tic Plants (B14) Sparsely Vegetated Concave Surface (B8)
	Sulfide Odor (C1) Drainage Patterns (B10)
	Rhizospheres on Living Roots (C3) Moss Trim Lines (B16)
	of Reduced Iron (C4) Dry-Season Water Table (C2)
	n Reduction in Tilled Soils (C6) Crayfish Burrows (C8)
	Surface (C7) Saturation Visible on Aerial Imagery (C9)
	Dlain in Remarks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13) Field Observations:	FAC-Neutral Test (D5)
Surface Water Present? Yes No _X_ Depth (in-	ches).
Water Table Present? Yes No _X_ Depth (in	·
Saturation Present? Yes No _X Depth (in	
(includes capillary fringe)	Wettand Trydrology Tresent: Tes No
Describe Recorded Data (stream gauge, monitoring well, aerial	photos, previous inspections), if available:
Remarks:	

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-18, UPL
001-001	Absolute	Dominant I		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	20%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Fagus grandifolia	20%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Descript of Descript Chaption
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 16% (A/B)
6		<u> </u>		
	40%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 20%				Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20 /0 01	luiai covei		OBL species 0 x 1 = 0
4. Farmer and PfaRa	15%	VEC	FAC	FACW species <u>0</u> x 2 = <u>0</u>
a lley enece		YES		FAC species <u>15</u> x 3 = <u>45</u>
2. Ilex opaca	15%	YES	FACU	FACU species x 4 = 300
3				UPL species 10 x 5 = 50
4				Column Totals: 100 (A) 395 (B)
5				
6				Prevalence Index = B/A = 3.95
	30%	= Total Cove	r	Hydrophytic Vegetation Indicators:
50% of total cover:15%	_ 20% of	total cover:_	6%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5		•		¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	ır.	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:_		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2. Podophyllum peltatum	10%	YES	UPL	Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4		<u> </u>		than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				
		= Total Cove		
50% of total cover: 15%	20% of	total cover:_	6%	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				
<u></u>		= Total Cove		Hydrophytic
				Vegetation Present? Yes No
50% of total cover:		total cover:_		
Remarks: (Include photo numbers here or on a separate sh	neet.)			

Sampling Point: DP-18, UPL

Depth Matrix Redox Features
0-4 10YR 5/3 100 Sandy Loam 4-18 10YR 6/6 100 Sandy C. Loam 1 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. 2 Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Indicators for Problematic Hydric Soils 3: Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 147) Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16) Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) (MLRA 147, 148) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Peledom Hatrix (F3) 2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) WILL A147, 148) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) (LRR N, MLRA 136, 147) Other (Explain in Remarks) MLRA 147, 148) MLRA 136, 147, 148) Sandy Gleyed Matrix (S4) Piedmont Floodplain Soils (F19) (MLRA 136, 147) Sandy Gleyed Matrix (S4) WILRA 136, 147, 148) Wetland hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Type:
4-18 10YR 6/6 100 Sandy C. Loam Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histosol (A1) Dark Surface (S7) Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147) Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16) Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) (MLRA 147, 148) Stratified Layers (A5) Depleted Matrix (F2) Piedmont Floodplain Soils (F19) Stratified Layers (A5) Pelpeted Dark Surface (F6) Meta Matrix (F2) Surface (F7) Piedmont Floodplain Soils (F19) Thick Dark Surface (A11) Depleted Dark Surface (F7) Pelpeted Dark Surface (F7) Piedmont Floodplain Soils (F19) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 147, 148) MLRA 147, 148) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Gleyed Matrix (S4) Piedmont Floodplain Soils (F19) (MLRA 148) Wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type:
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Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic. Restrictive Layer (if observed): Type:
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Denth (inches): Hydric Soil Present? Ves No X
Popul (mono). Hydric John 1656 iii. 165 iii.
Remarks:
Tomano.

Project/Site: Cumberland	County Property	Citv/C	county: Cumberlan	d County	Sampling Date: 4/25/2018		
Applicant/Owner: CWV, LLC; of					Sampling Point: DP-19		
Investigator(s): Hannah L.		Section	on Township Range				
					Slope (%): 1-3%		
					Datum:		
Soil Map Unit Name:				NWI classific			
Are climatic / hydrologic condit				(If no, explain in F			
Are Vegetation, Soil					present? Yes X No		
Are Vegetation, Soil				explain any answe			
Are vegetation, 50ii	, or riyarology	naturally problems	alic: (II fieeded,	explain any answe	ers in Nemarks.)		
SUMMARY OF FINDIN	GS – Attach site	map showing san	pling point locati	ons, transects	s, important features, etc.		
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area				
Hydric Soil Present?	Yes X	No	within a Wetland?	$_{Yes}$ $ imes$	No		
Wetland Hydrology Present?	Yes X	No					
Remarks:							
Data point was taken i	poyt to flog K 147						
Data point was taken i	lext to liag K-147.						
HYDROLOGY							
Wetland Hydrology Indicate	ors:			Secondary Indica	ators (minimum of two required)		
Primary Indicators (minimum		eck all that apply)		Surface Soil			
Surface Water (A1)		_ True Aquatic Plants (B14)	· · · · · · · · · · · · · · · · · · ·	getated Concave Surface (B8)		
X High Water Table (A2)		_ Hydrogen Sulfide Od					
Saturation (A3)		Oxidized Rhizospher					
Water Marks (B1)		Presence of Reduced	-		Water Table (C2)		
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Bu			
Drift Deposits (B3)	<u></u>	_ Thin Muck Surface (C	27)	Saturation V	isible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	<u></u>	_ Other (Explain in Rer	narks)	Stunted or S	Stressed Plants (D1)		
Iron Deposits (B5)				X Geomorphic	Position (D2)		
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqu	uitard (D3)		
X Water-Stained Leaves (E	39)			Microtopogr	aphic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutra	l Test (D5)		
Field Observations:							
Surface Water Present?	Yes No _X	Depth (inches):					
Water Table Present?		Depth (inches):5"					
Saturation Present?		Depth (inches):		Hydrology Prese	nt? Yes X No		
(includes capillary fringe)		and the second		-9-11-			
Describe Recorded Data (str	eam gauge, monitoring	g well, aerial photos, pre	vious inspections), if av	allable:			
Remarks:							

/EGETATION (Five Strata) – Use scientific	names of	plants.		Sampling Point: DP-19
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species
1. Plantanus occidentalis	25%	_YES_	FACW	That Are OBL, FACW, or FAC: 6 (A)
2				Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Descript of Descript Consider
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
6				
	25%	= Total Cov	er	Prevalence Index worksheet:
50% of total cover:12	2.5% 20% of	total cover:	5%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20 / 01	total cover.		OBL species x 1 =
Carpinus caroliniana	20%	YES	FAC	FACW species x 2 =
a Agar rubrum	150/	YES	FAC	FAC species x 3 =
2. Acer rubrum				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5	_			
6				Prevalence Index = B/A =
	35%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 17	.5% 20% of	total cover:	7%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'				✓ 2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	15%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
6	-			approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
				herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				
		= Total Cov		
50% of total cover:7	7.5% 20% of	total cover:	3%	
Woody Vine Stratum (Plot size: 20'x20')				
1. Vitis riparia	15%	YES	FACW	
2. Smilax rotundifolia	10%	YES	FAC	
3				
4 5.				
J		Total Cov		Hydrophytic
		= Total Cov		Vegetation Present? Yes X No
50% of total cover: 12.	. <u>5%</u> 20% of	total cover:	5%	169 / NO
Remarks: (Include photo numbers here or on a separate	e sheet.)			

SOIL Sampling Point: DP-19

Profile Desc	ription: (Describe	to the dept	th needed to docun	nent the i	ndicator	or confirm	the absence of indicators.)			
Depth	Matrix		Redo	x Feature:	s					
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u> <u>Remarks</u>			
0-5	10YR 3/2	100			-		Sandy Loam			
5-18	10YR 6/2	85	10YR 7/8	15	С	PL	Sandy Loam			
					-					
	-									
		· 			-					
1		Indian DM	Deduced Metric MC				21 and 22 Properties At Matrix			
Hydric Soil	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	s=Masked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :			
_			D 10 ((07)						
Histosol			Dark Surface		(CO) (N	U D A 447	2 cm Muck (A10) (MLRA 147)			
	oipedon (A2)		Polyvalue Be							
Black Hi	en Sulfide (A4)		Thin Dark Su Loamy Gleye			47, 140)	(MLRA 147, 148) Piedmont Floodplain Soils (F19)			
	d Layers (A5)		Z Depleted Mat	,	r <i>z)</i>		(MLRA 136, 147)			
	ick (A10) (LRR N)		Redox Dark S	. ,	·6)		Very Shallow Dark Surface (TF12)			
	d Below Dark Surface	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)			
	ark Surface (A12)	- (Redox Depre							
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			LRR N,				
MLRA	A 147, 148)		MLRA 13	6)						
	Bleyed Matrix (S4)		Umbric Surfa				³ Indicators of hydrophytic vegetation and			
	Redox (S5)			Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology mus						
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	7) unless disturbed or problematic.			
	Layer (if observed):									
Type:			<u></u>							
Depth (inc	ches):						Hydric Soil Present? Yes X No No			
Remarks:										

Project/Site: Cumberland Coun	ty Property	City/C	county: Cumberlar	nd County	Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o Jai			,		Sampling Point: <u>DP-19, UPL</u>
Investigator(s): Hannah L. Miller		Section	on, Township, Range: _	Tax Map # 45-A	
Landform (hillslope, terrace, etc.): Hil	Islane/Tae of Slar	ne Local reli	ief (concave_convex_n	one).	Slone (%)· 3-5%
Subregion (LRR or MLRA): n/a			Long:		
Soil Map Unit Name: Chewacla and				NWI classifica	
Are climatic / hydrologic conditions on		his time of year? Y	res X No	(If no, explain in Re	
Are Vegetation, Soil, o					esent? Yes X No
Are Vegetation, Soil, o				, explain any answers	
, com, com	Trydrology	_naturally problems	dio: (ii fieddad	, explain any anowers	o in recinance.
SUMMARY OF FINDINGS - A	Attach site map	showing sam	npling point locat	ions, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes	No. Y			
Hydric Soil Present?	Yes		Is the Sampled Area within a Wetland?	l Ves	_ No <u>X</u>
Wetland Hydrology Present?	Yes		within a wettand:	163	
Remarks:	100	110 _71			
Nomano.					
Data point was taken adjace	nt to flag K-147.				
HYDROLOGY	_				
Wetland Hydrology Indicators:					ors (minimum of two required)
Primary Indicators (minimum of one i	-			Surface Soil C	
Surface Water (A1)		ue Aquatic Plants (etated Concave Surface (B8)
High Water Table (A2)	-	drogen Sulfide Od		Drainage Patt	
Saturation (A3)			es on Living Roots (C3)		, ,
Water Marks (B1)		esence of Reduced			/ater Table (C2)
Sediment Deposits (B2)			on in Tilled Soils (C6)	Crayfish Burro	
Drift Deposits (B3)		in Muck Surface (C			ible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Ou	her (Explain in Rer	narks)		essed Plants (D1)
Iron Deposits (B5) Inundation Visible on Aerial Imag	nery (R7)			Geomorphic F Shallow Aquit	
Water-Stained Leaves (B9)	jery (Dr)				phic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	
Field Observations:					
	No <u>×</u> D	enth (inches):			
	No _X_ D				
	No _X_ D			Hydrology Present	? Yes No X
(includes capillary fringe)					. 103 NO
Describe Recorded Data (stream gau	ige, monitoring well	, aerial photos, pre	evious inspections), if a	vailable:	
Remarks:					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-19, UPL
001-001	Absolute	Dominant I		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	30%	<u>YES</u>	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. Fagus grandifolia	35%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Descript of Dominant Charles
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)
6				
<u> </u>	050/	= Total Cove	<u></u> -	Prevalence Index worksheet:
50% of total cover: 32.5	% 20% of	total cover	13%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	/ 20 /0 Oi	luidi cover		OBL species 0 x 1 = 0
4. How are an	15%	VEC	EAC	FACW species <u>0</u> x 2 = <u>0</u>
1. Ilex opaca		YES	FAC	FAC species <u>25</u> x 3 = <u>75</u>
2. Acer rubrum	10%	YES	FAC	FACU species x 4 = 300
3				UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 375 (B)
5				,,,,,,,
6				Prevalence Index = B/A = 3.75
	25%	= Total Cove	∍r	Hydrophytic Vegetation Indicators:
50% of total cover:12.5	5% 20% of	total cover:	5%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	2070 01	total cover.		2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3	-			Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	∍r	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')		_		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	10%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
_		· · · · · · · · · · · · · · · · · · ·	17100	
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
				than 3 in. (7.6 cm) DBH.
4				a.
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximatory of to 20 ft (1 to 0 ft), in Holghi.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine All woody vines regardless of height
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
50% of total cover: 5%	20% of	total cover:	2%	
Woody Vine Stratum (Plot size: 20'x20')	20 /0 01	total cover.	<u> </u>	
1				
2				
3				
4				
5				Hydrophytic
	:	= Total Cove	∍r	Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No X
Remarks: (Include photo numbers here or on a separate si		total oover		
Remarks. (include prioto numbers here of on a separate si	neet.)			

Sampling Point: DP-19, UPL

Depth	Matrix		Redox Features	- December
inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc ²	
0-4	10YR 5/3	100		Sandy Loam_
4-10	10YR 5/6	100		Sandy Loam
10-18	10YR 6/4	100		Sandy Loam
				-
	•			
	-			
[vne: C=C	oncentration D-D	enletion PM-F	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
	Indicators:	epietion, Kivi=K	Reduced Matrix, MS=Masked Sand Grains.	Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA 14	
	istic (A3)		Thin Dark Surface (S9) (MLRA 147, 148	
	en Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	uck (A10) (LRR N)	(0.4.4)	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	d Below Dark Surfa ark Surface (A12)	ace (A11)	Depleted Dark Surface (F7)Redox Depressions (F8)	Other (Explain in Remarks)
	Mucky Mineral (S1)	(I RR N	Iron-Manganese Masses (F12) (LRR N,	
	A 147, 148)	(=::::,	MLRA 136)	
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy F	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA	148) wetland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (MLRA 127, 1	unless disturbed or problematic.
estrictive	Layer (if observed	d):		
Type:			<u> </u>	
Depth (in	ches):		<u> </u>	Hydric Soil Present? Yes No X
emarks:				

Project/Site: Cumberland	County P	roperty	Citv/C	county: Cumber	land County	Sampling Date:4/25/2018		
Applicant/Owner: CWV, LLC; c	o James H. M	1artin				Sampling Point: DP-20		
Investigator(s): Shannon D			Section	on, Township, Rang				
						Slope (%):1-3%		
						Datum:		
Soil Map Unit Name: Cecil sa				-	NWI classi			
Are climatic / hydrologic condit					(If no, explain in			
Are Vegetation, Soil						remarks.) resent? Yes X No No		
Are Vegetation, Soil					ded, explain any ansv			
Are vegetation, Soil	, or riyo	arology	naturally problems	alic: (II liee	deu, explain any answ	vers in Nemarks.)		
SUMMARY OF FINDIN	GS – Atta	ch site	map showing san	npling point lo	cations, transect	ts, important features, etc.		
Hydrophytic Vegetation Prese	ent?	Yes X	No	Is the Sampled A	rea			
Hydric Soil Present?		Yes X		within a Wetland	? Yes $\underline{\times}$	No		
Wetland Hydrology Present?		Yes X	No					
Remarks:								
Data point was taken r	ovt to floa	C 13						
Data point was taken i	lext to flag	J G-13.						
HYDROLOGY								
Wetland Hydrology Indicate	ors:				Secondary Indi	cators (minimum of two required)		
Primary Indicators (minimum		guired: che	ck all that apply)		· ·	oil Cracks (B6)		
X Surface Water (A1)			_ True Aquatic Plants (B14)		egetated Concave Surface (B8)		
X High Water Table (A2)			_ Hydrogen Sulfide Od			Drainage Patterns (B10)		
Saturation (A3)			Oxidized Rhizospher					
Water Marks (B1)			Presence of Reduced	_		n Water Table (C2)		
Sediment Deposits (B2)			_ Recent Iron Reduction			urrows (C8)		
Drift Deposits (B3)			Thin Muck Surface (0			Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)			_ Other (Explain in Rer			Stressed Plants (D1)		
Iron Deposits (B5)						ic Position (D2)		
Inundation Visible on Ae	ial Imagery ((B7)			Shallow Ac	quitard (D3)		
X Water-Stained Leaves (E	39)					graphic Relief (D4)		
Aquatic Fauna (B13)						al Test (D5)		
Field Observations:								
Surface Water Present?	Yes X	No	Depth (inches): 0"					
Water Table Present?			Depth (inches): 6"					
Saturation Present?			Depth (inches):		and Hydrology Pres	ent? Yes X No		
(includes capillary fringe)								
Describe Recorded Data (stre	eam gauge, r	monitoring	well, aerial photos, pre	vious inspections),	if available:			
Remarks:								

/EGETATION (Five Strata) – Use scientific n	ames of	plants.		Sampling Point: DP-20
201/201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species That Are OBL FACW, or FAC: 3 (A)
1. Alnus serrulata	65%		FACW	That Are OBL, FACW, or FAC: 3 (A)
2. Plantanus occidentalis	18%	<u>YES</u>	FACW	Total Number of Dominant
3				Species Across All Strata: 4 (B)
4		-		Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 75% (A/B)
6				Prevalence Index worksheet:
	83%	= Total Cove	er	
50% of total cover: 41.	<u>5%</u> 20% of	total cover:	16.6%	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')				FACW species x 2 =
1	_			
2				FACUlar asian x 3 =
3				FACU species x 4 =
4				UPL species x 5 =(D)
5				Column Totals: (A) (B)
6				Prevalence Index = B/A =
		= Total Cove	er	Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover:	20% 01	total cover:		2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				3 - Prevalence Index is ≤3.0¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5		-		¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:_		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	10%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2. Lonicera japonica	7%	YES	FACU	Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4	_			than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb - All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10	_			Manager All conductions are small and of height
11	_			Woody vine – All woody vines, regardless of height.
	17%	= Total Cove	er	
50% of total cover: 8.				
Woody Vine Stratum (Plot size: 20'x20')		101a. 0070 <u> </u>		
1				
2				
3				
4				
5. <u> </u>				Hydrophytic
		= Total Cove		Vegetation
50% of total cover:		total cover:		
Remarks: (Include photo numbers here or on a separate	sheet.)			

SOIL Sampling Point: DP-20

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the i	ndicator	or confirm	n the absence of indicators.)
Depth	Matrix		Redo	x Feature:	s		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-6	10YR 3/3	100					Sandy Loam
6-18	10YR 6/1	90	10YR 7/8	10	С	PL	Sandy Loam
	-						
	-						
					'		
1Typo: C-C	anacatration D_Don	lotion DM	- Poduced Metrix MS		L Cond Cr		2Location: DL - Doro Lining M-Motrix
Hydric Soil	oncentration, D=Dep	ielion, Rivi=	Reduced Matrix, Mc	=iviasked	Sand Gra	airis.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
-			Dorle Curfoso	(07)			•
Histosol	oipedon (A2)		Dark Surface		oo (S9) (N	II D A 147	2 cm Muck (A10) (MLRA 147)
Histic Ep			Polyvalue Be Thin Dark Su				148) Coast Prairie Redox (A16) (MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			47, 140)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Z Depleted Mat	,	r <i>z)</i>		(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S	. ,	·6)		Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)
	ark Surface (A12)	,	Redox Depre				
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			LRR N,	
	A 147, 148)	,	MLRA 13		()(•	
	Gleyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)	³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo				
Stripped	Matrix (S6)		Red Parent N	laterial (F	21) (MLR	A 127, 147	7) unless disturbed or problematic.
Restrictive I	Layer (if observed):						
Type:							
Depth (in	ches):						Hydric Soil Present? Yes X No
Remarks:	, -						

Project/Site: Cumberland Count	y Property	City/Co	ounty: Cumberlan	nd County	Sampling Date: 4/25/2018
Applicant/Owner: CWV, LLC; c/o Jar			,		Sampling Point: <u>DP-20, UPL</u>
Investigator(s): Shannon D. Hill		Sectio	n, Township, Range: _	Tax Map #45-A	<u> </u>
Landform (hillslope, terrace, etc.): Hill	Islope/Toe of slope	e Local relie	ef (concave, convex, n	one):	Slope (%): 4-6%
					Datum:
Soil Map Unit Name: Cecil sandy los				NWI classific	
Are climatic / hydrologic conditions on				(If no, explain in R	
Are Vegetation, Soil, or					present? Yes X No
Are Vegetation, Soil, or				explain any answe	
, con, con, con	Trydrology	naturally problema	iio: (ii riccaca,	cxpidiri diriy dilowe	io in Romano.)
SUMMARY OF FINDINGS – A	Attach site map	showing sam	pling point locati	ions, transects	, important features, etc.
Hydrophytic Vegetation Present?	Yes 1	No X	Is the Sampled Area		
Hydric Soil Present?	Yes N		within a Wetland?	Yes	No <u> </u>
Wetland Hydrology Present?	Yes N	No X			<u> </u>
Remarks:					
Data point was taken adjacer	it to flag G-13.				
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is	s required: check all	that apply)		Surface Soil	
Surface Water (A1)	-	ie Aquatic Plants (E	314)		getated Concave Surface (B8)
High Water Table (A2)		drogen Sulfide Odd		Drainage Pat	
Saturation (A3)		-	es on Living Roots (C3)		
Water Marks (B1)		sence of Reduced			Water Table (C2)
Sediment Deposits (B2)			n in Tilled Soils (C6)	Crayfish Burr	
Drift Deposits (B3)		n Muck Surface (C		· ·	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		ner (Explain in Rem			tressed Plants (D1)
Iron Deposits (B5)				Geomorphic	Position (D2)
Inundation Visible on Aerial Imag	ery (B7)			Shallow Aqui	itard (D3)
Water-Stained Leaves (B9)				Microtopogra	phic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)
Field Observations:					
Surface Water Present? Yes _	No <u>X</u> De	epth (inches):			
Water Table Present? Yes _	No <u>X</u> De	epth (inches):			
Saturation Present? Yes _	No <u>X</u> De	epth (inches):	Wetland	Hydrology Presen	t? Yes No <u>X</u>
(includes capillary fringe) Describe Recorded Data (stream gau	go monitoring well	aarial photos prov	(ious inspections) if o	voilable:	
Describe Recorded Data (stream gad	ge, monitoring weil,	aeriai priotos, prev	vious irispections), ii av	/allable:	
Remarks:					
1					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-20, UPL
201/201	Absolute	Dominant I		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	25%	YES	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. Fagus grandifolia		YES	FACU	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 40% (A/B)
6				Prevalence Index worksheet:
07.7		= Total Cove		Total % Cover of: Multiply by:
50% of total cover: 27.5	<u>%</u> 20% of	total cover:_	11%	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20'				FACW species 0 x 2 = 0
1. Ilex opaca	15%	YES	FAC	FAC species 25 x 3 = 75
2			<u></u>	FACU species 75 x 4 = 300
3			<u></u>	UPL species 0 x 5 = 0
4				Column Totals: 100 (A) 375 (B)
5				
6				Prevalence Index = B/A = 3.75
	15%	= Total Cove	r	Hydrophytic Vegetation Indicators:
50% of total cover:7.5%	<u>6</u> 20% of	total cover:_	3%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20'				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				4
6			<u> </u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cove	r	Definitions of Five Vegetation Strata:
50% of total cover:				Definitions of Five Vegetation Strata.
Herb Stratum (Plot size: 20'x20')	20% 01	total cover		Tree – Woody plants, excluding woody vines,
Polystichum acrostichoides	20%	YES	FACIL	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
			FACU	
2				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3 4.				than 3 in. (7.6 cm) DBH.
				Should Mandy plants avaluding woody vines
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11	200/	T-1-1-0		
		= Total Cove		
50% of total cover: 10%	20% of	total cover:_	4%	
Woody Vine Stratum (Plot size: 20'x20')	1001			
1. Smilax rotundifolia	10%	YES	FAC	
2			<u></u>	
3				
4				
5				Hydrophytic
	10%	= Total Cove	r	Vegetation
50% of total cover:5%	20% of	total cover:	2%	Present? Yes NoX
Remarks: (Include photo numbers here or on a separate sl		_		l
(1111) 1111 1111 1111 1111 1111 1111	, ,			

Sampling Point: DP-20, UPL

/* I \	Matrix		Redox Features	2 Demande
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc	
0-5	10YR 5/3	100		Sandy Loam
5-18	10YR 5/4	100		Sandy Loam
				<u> </u>
•				
		pletion, RM=R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
dric Soil I	ndicators:			Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA	
_ Black His			Thin Dark Surface (S9) (MLRA 147, 14	
	n Sulfide (A4) I Layers (A5)		Loamy Gleyed Matrix (F2)Depleted Matrix (F3)	Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ice (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	ark Surface (A12)	` ,	Redox Depressions (F8)	
	lucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR N	I,
MLRA	A 147, 148)		MLRA 136)	
	lleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122	
	edox (S5)		Piedmont Floodplain Soils (F19) (MLR	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127	, 147) unless disturbed or problematic.
	_ayer (if observed	i):		
Type:			_	
			<u> </u>	Hydric Soil Present? Yes No _X
	ches):			
	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
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Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			
Depth (inc	ches):			

Project/Site: Cumberland	County Pr	roperty	Citv/C	county: Cumb	erland County	Sampling Date: 4/27/2018
Applicant/Owner: CWV, LLC; c						Sampling Point: DP-21
Investigator(s): Shannon D	. Hill		Section	on Townshin Ra	nge: Tax Map # 45	-A-1
		ain	L ocal rel	ief (concave, con	vex none):	Slope (%):1-3%
						Slope (%)
Soil Map Unit Name: Enon-H						
•						
Are climatic / hydrologic condit			· · · · · · · · · · · · · · · · · · ·			
Are Vegetation, Soil						present? Yes X No
Are Vegetation, Soil	, or Hydi	rology	naturally problemate	atic? (If ne	eeded, explain any answ	ers in Remarks.)
SUMMARY OF FINDING	GS – Attac	ch site n	nap showing san	npling point l	ocations, transect	s, important features, etc.
Hydrophytic Vegetation Prese	ent?	res X	No	Is the Sampled	l Aron	
Hydric Soil Present?		res X		within a Wetlar		No
Wetland Hydrology Present?		res X	No			
Remarks:		-	_			
Data point was taken r	next to flag	G-76.				
HYDROLOGY						
Wetland Hydrology Indicate	ors:				Secondary India	cators (minimum of two required)
Primary Indicators (minimum		uirod: choc	ok all that apply)			il Cracks (B6)
	or one is requ	alleu, chec		(D4.4)		egetated Concave Surface (B8)
X Surface Water (A1)			True Aquatic Plants (
			Hydrogen Sulfide Od		X Drainage P	
X Saturation (A3)			Oxidized Rhizospher			
Water Marks (B1)			Presence of Reduced			n Water Table (C2)
Sediment Deposits (B2)			Recent Iron Reduction			
Drift Deposits (B3)			Thin Muck Surface (C			Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)			Other (Explain in Rer	narks)		Stressed Plants (D1)
Iron Deposits (B5)		D-7\			X Geomorphi	
Inundation Visible on Aer		B7)			Shallow Aq	
X Water-Stained Leaves (E	39)					raphic Relief (D4)
Aquatic Fauna (B13)					FAC-Neutra	al Test (D5)
Field Observations:	🗸					
Surface Water Present?			_ Depth (inches): _0"			
Water Table Present?			_ Depth (inches):4"			.
Saturation Present?	Yes X	No	_ Depth (inches): 6"	We	etland Hydrology Prese	ent? Yes X No
(includes capillary fringe) Describe Recorded Data (stre	eam dalide n	nonitoring	well aerial photos pre	vious inspections	s) if available:	
December Recorded Data (circ	Jam gaago, n	ioriitorii ig	won, donar priotoc, pro	Wiede inopositione	o,, ii availabio.	
Pomorko:						
Remarks:						

/EGETATION (Five Strata) – Use scientific na	Sampling Point: DP-21			
<u>`</u>	Absolute	Dominant	Indicator	Dominance Test worksheet:
001 001		Species?		Number of Dominant Species _
	25%	YES	FACW	That Are OBL, FACW, or FAC: 5 (A)
2				
3				Total Number of Dominant Species Across All Strata: 5 (B)
				Species Across Air Strata.
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
	25%	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover:12.5	<u>%</u> 20% of	total cover:	5%	
Sapling Stratum (Plot size: 20'x20'				OBL species x 1 =
1. Betula nigra	25%	YES	FACW	FACW species x 2 =
2. Acer rubrum	20%	YES	FAC	FAC species x 3 =
2 Carninus caroliniana	150/			FACU species x 4 =
· ·		YES	<u>FAC</u>	UPL species x 5 =
4				Column Totals: (A) (B)
5				
6				Prevalence Index = B/A =
	60%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover: 30%	20% of	total cover:	12%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	2070 01	total oover.		2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				Troubination tydrophlytto Vogotation (Explain)
5				The disease of burdels and models and burdenland and
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
FOO/ of total across	200/ of	total agreem		Definitions of Five vegetation Strata.
50% of total cover:	20% 01	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')		\/F0		approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	15%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
				Harb Allbart access (accessed Allbarta Carlo Para
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				woody vine – All woody vines, regardless of neight.
	15%	= Total Cov	er	
50% of total cover: 7.5°				
	20 / 01	total cover.		
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5.				
~ <u>.</u>		- Total Corr	or.	Hydrophytic
	<u> </u>	= Total Cov		Vegetation
50% of total cover:	20% of	total cover:		1 100 / 140
Remarks: (Include photo numbers here or on a separate sh	neet.)			

SOIL Sampling Point: DP-21

Profile Desc	ription: (Describe t	o the depti	n needed to docu	ment the i	ndicator	or confirm	the absence	of indic	cators.)
Depth	Matrix		Redo	x Features	3				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
0-4	10YR 3/3	100					Sandy Loa	am	
4-18	10YR 7/1	90	10YR 6/8	10	С	PL	Sandy Loan	n	
					-				
								-	
									_
			_						·
1Typo: C-C	oncentration, D=Depl	otion PM-I	Poducod Matrix M	S-Mackad	Sand Gr	nine	² Location: D	I -Poro I	Lining, M=Matrix.
Hydric Soil		etion, Rivi=i	Reduced Matrix, M	5=Masked	Sand Gra	ains.			r Problematic Hydric Soils ³ :
-			Dork Surface	(07)					· ·
Histosol	oipedon (A2)		Dark Surface Polyvalue Be		CE (SR) /N	II R A 1/17			ck (A10) (MLRA 147) airie Redox (A16)
Black Hi			Thin Dark Su				0,		147, 148)
	en Sulfide (A4)		Loamy Gleye			,,	F		Floodplain Soils (F19)
	d Layers (A5)		X Depleted Ma	,	,		<u> </u>		136, 147)
	ick (A10) (LRR N)		Redox Dark		6)		\		llow Dark Surface (TF12)
Depleted	d Below Dark Surface	e (A11)	Depleted Da	rk Surface	(F7)		c	Other (Ex	plain in Remarks)
	ark Surface (A12)		Redox Depre						
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (LRR N,			
	A 147, 148)		MLRA 13	-			3.	_	
	Gleyed Matrix (S4)		Umbric Surfa						of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					-	drology must be present,
	Matrix (S6) Layer (if observed):		Red Parent I	viateriai (F.	21) (WILK	A 127, 147) un	iless dist	urbed or problematic.
	Layer (ii observeu).								
Type:	1 \								X X
	ches):		<u> </u>				Hydric Soil	Presen	t? Yes <u>×</u> No
Remarks:									

Project/Site: Cumberland C	ounty Property	City/C	county: Cumberla	nd County	_ Sampling Date: <u>4/27/2018</u>	
Applicant/Owner: CWV, LLC; c/	o James H. Martin			State: VA	Sampling Point: <u>DP-21, UPL</u>	
Investigator(s): Shannon D. H		Section	on, Township, Range:	Tax Map #45-A	\-1	
• ',	: Hillslope	Local rel	ief (concave, convex.	none):	Slope (%): 3-5%	
Subregion (LRR or MLRA): n/a					Datum:	
Soil Map Unit Name: Enon-Hel			-	NWI classifi		
Are climatic / hydrologic condition				(If no, explain in F		
Are Vegetation, Soil					present? Yes X No	
Are Vegetation, Soil				d, explain any answe		
Are vegetation, 30ii	, or rivurology	_ naturally problems	alic: (II fleeded	u, explain any answi	sis in Remarks.)	
SUMMARY OF FINDINGS	S – Attach site ma	p showing san	npling point loca	tions, transects	s, important features, etc.	
Hydrophytic Vegetation Present	? Yes	No_X	Is the Sampled Are	а		
Hydric Soil Present?	Yes	No_X	within a Wetland?		No <u> </u>	
Wetland Hydrology Present?	Yes	No X				
Remarks:						
Data a sint talian adi	:					
Data point was taken ad	jacent to flag G-76.					
HYDROLOGY						
Wetland Hydrology Indicators	s:			Secondary Indic	ators (minimum of two required)	
Primary Indicators (minimum of	one is required; check	all that apply)		Surface Soi	l Cracks (B6)	
Surface Water (A1)	T	rue Aquatic Plants (B14)	Sparsely Ve	egetated Concave Surface (B8)	
High Water Table (A2)		lydrogen Sulfide Od			atterns (B10)	
Saturation (A3)			es on Living Roots (C3	-		
Water Marks (B1)		resence of Reduced	=	Dry-Season Water Table (C2)		
Sediment Deposits (B2)			n in Tilled Soils (C6)	Crayfish Bu		
Drift Deposits (B3)		hin Muck Surface (C		•	/isible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Other (Explain in Rer			Stressed Plants (D1)	
Iron Deposits (B5)	_	` '	,		Position (D2)	
Inundation Visible on Aerial	I Imagery (B7)			Shallow Aqu		
Water-Stained Leaves (B9)					aphic Relief (D4)	
Aquatic Fauna (B13)				FAC-Neutra	. , ,	
Field Observations:						
	Yes No _X_ I	Depth (inches):				
	Yes No _X					
	Yes No _X !			d Hydrology Prese	nt? Yes No X	
(includes capillary fringe)	165 NO _X	Deptif (inches).		a riyarology i rese	iit: les iioX	
Describe Recorded Data (stream	m gauge, monitoring we	ell, aerial photos, pre	vious inspections), if a	available:		
Remarks:						
1						

/EGETATION (Five Strata) – Use scientific na	ames of _l	plants.		Sampling Point: DP-21, UPL
	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	25%	YES	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. Liquidambar styraciflua	25%	YES	FAC	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 40% (A/B)
6				Prevalence Index worksheet:
	50%	= Total Cove	ər	
50% of total cover: 25%	20% of	total cover:	10%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')				OBL species $0 \times 1 = 0$
1Juniperus virginiana	20%	YES	FACU	FACW species 0 $x = 0$
2. Carpinus caroliniana	15%	YES	FAC	FACUspecies 40 x 3 = 120 FACUspecies 60 x 4 = 240
3				A T = T T
4				UPL species $0 \times 5 = 0$
5				Column Totals:100 (A)360 (B)
6.	-			Prevalence Index = B/A = 3.60
6	35%	= Total Cove		Hydrophytic Vegetation Indicators:
50% of total cover: 17.5	20% of	total cover:	1%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				Ploblematic Hydrophytic vegetation (Explain)
5				1
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	 20% of	total cover:		
Herb Stratum (Plot size: 20'x20')	20 /0 0.	lotal cover.		Tree – Woody plants, excluding woody vines,
Polystichum acrostichoides	15%	VES	EACH	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
			· ·	
2				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximately 3 to 20 ft (1 to 6 fil) in neight.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Manadavina All woody vince regardless of height
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
50% of total cover: _7.5%				
Woody Vine Stratum (Plot size: 20'x20')		10101 00.0	0,0	
1				
2				
3				
4				
5				Hydrophytic
		= Total Cove	ər	Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No_X
Remarks: (Include photo numbers here or on a separate s				
Remarks. (include photo numbers here of on a separate s	nieet.)			

Sampling Point: DP-21, UPL

Profile Desc	ription: (Describe	to the dept	h needed to docun	ent the ir	ndicator o	or confirm	n the absence of indicators.)
Depth	Matrix		Redox	(Features	}		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 5/3	100					Sandy Loam_
4-12	10YR 5/4	100					Sandy Loam
12-18	10YR 5/4	100					Sandy Clay Loam
		· <u></u>					
		<u> </u>					
¹Type: C=Co	oncentration, D=Dep	letion RM-	Reduced Matrix MS		Sand Gra	ins	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I		iouon, ruvi–	reduced Matrix, Me		Odrid Ord		Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)			2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		e (S8) (M	LRA 147,	
Black His			Thin Dark Su				(MLRA 147, 148)
Hydroge	n Sulfide (A4)		Loamy Gleye	d Matrix (F	- 2)		Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat				(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark S	,	•		Very Shallow Dark Surface (TF12)
	Below Dark Surfac	e (A11)	Depleted Dar				Other (Explain in Remarks)
	ark Surface (A12)	DD N	Redox Depre			DD N	
	lucky Mineral (S1) (L . 147, 148)	_KK N,	Iron-Mangane MLRA 136		S (F12) (L	KK N,	
	leyed Matrix (S4)		Umbric Surfa	•	MLRA 13	6. 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent M				
	ayer (if observed):			•		-	· ·
Type:							
Depth (inc	ches):		<u></u>				Hydric Soil Present? Yes No X
Remarks:							l

Project/Site: Cumberland (County Property	City/County:	Cumberland	d County	Sampling Date:	4/27/2018	
Applicant/Owner: CWV, LLC; c/o					Sampling Point		
Investigator(s): Shannon D.	Hill	Section, Tow	nshin Range.	Tax Map # 38-A	camping r on i		
Landform (hillslope, terrace, etc.). Floodplain	Local relief (con	cave convex no	ne).	Slone	e (%)· 0-2%	
Subregion (LRR or MLRA): n/a							
Soil Map Unit Name: Cecil san							
Are climatic / hydrologic conditio			,				
•		-			resent? Yes X	, No	
Are Vegetation, Soil						NO	
Are Vegetation, Soil	, or Hydrology na	aturally problematic?	(If needed, 6	explain any answe	rs in Remarks.)		
SUMMARY OF FINDING	S – Attach site map s	showing sampling	point location	ons, transects	, important fea	atures, etc.	
Hydrophytic Vegetation Preser	nt? Yes X No)Is the	Sampled Area				
Hydric Soil Present?			n a Wetland?	$_{Yes}$ $ imes$	No		
Wetland Hydrology Present?	Yes X No)					
Remarks:							
Data point was taken ne	ext to flag G-224.						
HYDROLOGY							
Wetland Hydrology Indicator	's:			Secondary Indica	tors (minimum of to	wo required)	
Primary Indicators (minimum o	f one is required; check all the	nat apply)		Surface Soil Cracks (B6)			
Surface Water (A1)	True	Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)			
★ High Water Table (A2)	-	ogen Sulfide Odor (C1)		X Drainage Patterns (B10)			
Saturation (A3)		ized Rhizospheres on L		X Moss Trim Li			
Water Marks (B1)		ence of Reduced Iron (Dry-Season \	Water Table (C2)		
Sediment Deposits (B2)	Rece	ent Iron Reduction in Til	ed Soils (C6)	Crayfish Burr	ows (C8)		
Drift Deposits (B3)		Muck Surface (C7)		Saturation Vi	sible on Aerial Ima	gery (C9)	
Algal Mat or Crust (B4)	Othe	r (Explain in Remarks)			ressed Plants (D1))	
Iron Deposits (B5)				X Geomorphic			
Inundation Visible on Aeria				Shallow Aqui			
X Water-Stained Leaves (B9))				phic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)		
Field Observations:							
Surface Water Present?	Yes No _X_ Dep						
Water Table Present?	Yes <u>X</u> No Dep	th (inches): 6"					
Saturation Present?	Yes No <u>X</u> Dep	th (inches):	Wetland I	Hydrology Presen	t? Yes X	No	
(includes capillary fringe) Describe Recorded Data (streat	am gauge monitoring well a	erial photos, previous i	nspections) if ava	ailable.			
Describe Necorded Bata (offee	an gaage, morntoning wen, a	criai priotos, provious ii	ispediiorio), ii ave	andolo.			
Remarks:							
Remarks.							

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-22
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species _
1. Acer rubrum	20%	YES_	FAC	That Are OBL, FACW, or FAC: 5 (A)
2				Total Number of Dominant
3				Species Across All Strata: 7 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 71% (A/B)
6				Brown land and the state of
	20%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover:10%	20% of	total cover:	4%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20'				OBL species x 1 =
Acer rubrum	15%	YES	FAC	FACW species x 2 =
2. Juniperus virginiana	10%	YES	FACU	FAC species x 3 =
3. Carpinus caroliana	10%	YES	FAC	FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6				Prevalence Index = B/A =
<u> </u>	35%	= Total Cove	er	Hydrophytic Vegetation Indicators:
500 () 17.50				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: <u>17.5</u> °	<u>70</u> 20% of	total cover:	1 70	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Kalmia latifolia	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2. Juncus effusus	10%	YES	FACW	Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5	_			Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
50% of total cover: 15%				
Woody Vine Stratum (Plot size: 20'x20')	20 /0 01	total cover.		
4. Consider notice differing	15%	YES	ΕΛC	
			170	
2				
3				
4			-	
5	150/-			Hydrophytic
7.50		= Total Cove		Vegetation Present? Yes No
50% of total cover: 7.5%	20% of	total cover:	ა%	165 / 140
Remarks: (Include photo numbers here or on a separate sl	heet.)			

SOIL Sampling Point: DP-22

Profile Desc	ription: (Describe	to the dept	th needed to docum	nent the i	ndicator	or confirm	the absence of indicators.)				
Depth	Matrix		Redo	x Feature:	s						
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture Remarks				
0-6	10YR 3/2	100			-		Sandy Loam				
6-18	10YR 6/2	85	7.5YR 5/6	15	С	PL	Sandy Loam				
					-						
	-										
		·	·	·	·						
		· 			-						
1 _T 0. 0.	tustian D Dan	lation DM	Deduced Metric MC	- Maalaa			21 continue DI Describing M Matrix				
Hydric Soil	oncentration, D=Dep	letion, Rivi=	Reduced Matrix, MS	s=iviasked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :				
_			Davis Confess	(07)			-				
Histosol	oipedon (A2)		Dark Surface		oo (CO) (N	II D A 4.47	2 cm Muck (A10) (MLRA 147)				
Histic Ep			Polyvalue Be Thin Dark Su				148) Coast Prairie Redox (A16) (MLRA 147, 148)				
	en Sulfide (A4)		Loamy Gleye			47, 140)	Piedmont Floodplain Soils (F19)				
	d Layers (A5)		Z Depleted Mar	,	1 2)		(MLRA 136, 147)				
	ick (A10) (LRR N)		Redox Dark	. ,	- 6)		Very Shallow Dark Surface (TF12)				
	d Below Dark Surface	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)				
	ark Surface (A12)	, ,	Redox Depre								
Sandy M	lucky Mineral (S1) (L	.RR N,	Iron-Mangan	ese Mass	es (F12) (LRR N,					
MLRA	A 147, 148)		MLRA 13	MLRA 136)							
	Bleyed Matrix (S4)			Umbric Surface (F13) (MLRA 136, 122) ³ Indicators of hydrophy							
	Redox (S5)	Piedmont Flo									
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	y) unless disturbed or problematic.				
	Layer (if observed):										
Type:			<u></u>								
Depth (in	ches):						Hydric Soil Present? Yes X No No				
Remarks:											

Project/Site: Cumberland Count	y Property	City/County:	Cumberland	d County	Sampling Date: 4/27/2018		
Applicant/Owner: CWV, LLC; c/o Jan					Sampling Point: <u>DP-22, UPL</u>		
Investigator(s): Shannon D. Hill		Section, Town	ship, Range:	Tax Map #38-A-	<u>-</u>		
Landform (hillslope, terrace, etc.): Hill	slope	Local relief (conc	ave. convex. no	one):	Slope (%): 4-6%		
	Lat:37.5				Datum:		
Soil Map Unit Name: Cecil sandy loa			_	NWI classifica			
Are climatic / hydrologic conditions on t				(If no, explain in Re			
Are Vegetation, Soil, or			Are "Norma		resent? Yes X No		
Are Vegetation, Soil, or				explain any answer			
, 1	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(. , ,	,		
SUMMARY OF FINDINGS – A	ttach site map sho	owing sampling	point location	ons, transects,	important features, etc.		
Hydrophytic Vegetation Present?	Yes No_>	×					
Hydric Soil Present?	Yes No_>	10 1110 1	Sampled Area a Wetland?	Yes	No <u>X</u>		
Wetland Hydrology Present?	Yes No _>						
Remarks:							
Data point was taken adjacer	it to flag G-224.						
LIVEROLOGY							
HYDROLOGY Westend Hydrology Indicators				Casandan Indiaat	tore (minimum of two required)		
Wetland Hydrology Indicators:	and the second second second second second			•	tors (minimum of two required)		
Primary Indicators (minimum of one is				Surface Soil (
Surface Water (A1)		juatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)		en Sulfide Odor (C1) d Rhizospheres on Liv	ring Poots (C2)	Drainage Patterns (B10)			
Saturation (A3)							
Water Marks (B1) Sediment Deposits (B2)		ce of Reduced Iron (Co Iron Reduction in Tille		Dry-Season Water Table (C2) Soils (C6) Crayfish Burrows (C8)			
Orift Deposits (B3)		ick Surface (C7)	a 30113 (CO)		sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Explain in Remarks)			ressed Plants (D1)		
Iron Deposits (B5)	0 (2	- Aprain III - 1 to III and 1		Geomorphic I			
Inundation Visible on Aerial Imag	ery (B7)			Shallow Aquit			
Water-Stained Leaves (B9)	, ,				phic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral			
Field Observations:							
	No X Depth	(inches):					
	No X Depth						
	No X Depth		Wetland	Hydrology Present	t? Yes No X		
(includes capillary fringe)							
Describe Recorded Data (stream gau	ge, monitoring well, aeria	al photos, previous ins	spections), if ava	ailable:			
Remarks:							

/EGETATION (Five Strata) – Use scientific na	ımes of	plants.		Sampling Point: DP-22, UPL
201.001	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?	Status	Number of Dominant Species
1. Liriodendron tulipfera	25%	YES	FACU	That Are OBL, FACW, or FAC: 0 (A)
2. Pinus taeda	20%	YES	FACU	Total Number of Dominant
3. Quercus alba	15%	YES	FACU	Species Across All Strata: 5 (B)
4				D (Describer of Original Co.
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)
6				111017110 0002, 171011, 011710.
	60%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 30%				Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20 /0 01	lulai cover.		OBL species 0 x 1 = 0
4. Querque elha	20%	YES	FACU	FACW species <u>0</u> x 2 = <u>0</u>
2. Juniperus virginiana	20%	YES	FACU	FAC species <u>0</u> x 3 = <u>90</u>
				FACU species 100 x 4 = 400
3				UPL species x 5 =0
4				Column Totals: (A) (B)
5				4.00
6				Prevalence Index = B/A = 4.00
		= Total Cove		Hydrophytic Vegetation Indicators:
50% of total cover: 20%	20% of	total cover:	8%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must
<u>. </u>		= Total Cove		be present, unless disturbed or problematic.
700 % of total account				Definitions of Five Vegetation Strata:
50% of total cover:	20% or	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1				(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling - Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				(nan 3 iii. (7.6 ciii) DDi i.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8		· <u></u>		herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
FOO/ of total agreem				
50% of total cover:	20% 01	total cover.		
Woody Vine Stratum (Plot size: 20'x20') 1. Smilax rotundifolia				
		· · · · · · · · · · · · · · · · · · ·	·	
2				
3				
4				
5				Hydrophytic
		= Total Cove	er	Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No_X
Remarks: (Include photo numbers here or on a separate sl		-		
(,,			

Sampling Point: DP-22, UPL

Depth	Matrix		Redox Features	- Toutum Bounds
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc ²	
0-4	10YR 5/3	100		Sandy Loam_
4-18	2.5Y 6/4	100		Sandy Loam
_				
				-
		pletion, RM=R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
dric Soil I	ndicators:			Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Below Surface (S8) (MLRA 14	
_ Black His			Thin Dark Surface (S9) (MLRA 147, 148	
	n Sulfide (A4) Layers (A5)		Loamy Gleyed Matrix (F2)Depleted Matrix (F3)	Piedmont Floodplain Soils (F19) (MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	Below Dark Surfa	ce (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	rk Surface (A12)	,	Redox Depressions (F8)	
	ucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR N,	
MLRA	147, 148)		MLRA 136)	
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Floodplain Soils (F19) (MLRA	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127, 1	unless disturbed or problematic.
	ayer (if observed):		
Typo:			<u> </u>	
Туре:				Hydric Soil Present? Yes No X
	:hes):		_	Trydrio doi: 1 tos 1 to
Depth (inc	ches):		_	Tryano con ricocini.
Depth (inc	hes):		_	Tryano con ricocnic.
Depth (inc	hes):		_	Tryano con ricocnic.
Depth (inc	hes):		_	injunio com ricocini.
Depth (inc	hes):			injunio com ricocini.
Depth (inc	hes):		-	injunio com ricocini.
Depth (inc	hes):		-	injunio com ricocini.
Depth (inc	hes):			injunio com ricocini.
Depth (inc	hes):			injunio com ricocini.
Depth (inc	hes):			injunio com ricocini.
Depth (inc	hes):			injunio con i resoluti.
Depth (inc	hes):			III III III III III III III III III II
Depth (inc	hes):			III III III III III III III III III II
Depth (inc	hes):			inguino con i resourci.
Depth (inc	ches):			inguino con i resourci.
Depth (inc	ches):			inguing contribution.
	ehes):			inguing contribution.
Depth (inc	ehes):			inguing contribution.
Depth (inc	ehes):			inguing contribution.
Depth (inc	ehes):			ing ing contribution.
Depth (inc	ehes):			Tryuno con ricocani.
Depth (inc	ehes):			Tryuno con ricocani.

Project/Site: Cumberland County Property Cit	ry/County: Cumberland County Sampling Date: 4/30/2018
Applicant/Owner: CWV, LLC; c/o James H. Martin	State: VA Sampling Point: DP-23
Investigator(s): Shannon D. Hill Se	ection, Township, Range: Tax Map # 38-A-7
Landform (hillslope, terrace, etc.): Floodplain Local	relief (concave, convex, none): Slope (%):
	Long:78.116817341
Soil Map Unit Name: Poindexter Wedowee Complex	NWI classification: R3
Are climatic / hydrologic conditions on the site typical for this time of year?	
Are Vegetation, Soil, or Hydrology significantly dis	V
Are Vegetation, Soil, or Hydrology naturally proble	
Are vegetation, on Trydrologynaturally proble	matic: (if needed, explain any answers in remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	ampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area
Hydric Soil Present? Yes X No No	within a Wetland? Yes X No
Wetland Hydrology Present? Yes X No	
Remarks:	
Data point was taken next to flag G-311.	
Bata point was taken next to mag 5 5 1 1.	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plan	
X High Water Table (A2) Hydrogen Sulfide	
	heres on Living Roots (C3) X Moss Trim Lines (B16)
Water Marks (B1) Presence of Redu	
	ction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface	
Algal Mat or Crust (B4) Other (Explain in F	
Iron Deposits (B5)	X Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
X Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No _X_ Depth (inches): _	
Water Table Present? Yes X No Depth (inches):	4"
Saturation Present? Yes No _X_ Depth (inches): _	Wetland Hydrology Present? Yes X No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos,	previous inspections), if available:
Remarks:	

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-23
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?		Number of Dominant Species
1. Carpinus caroliniana	15%	YES	FAC	That Are OBL, FACW, or FAC: 6 (A)
2. Acer rubrum	15%	YES	FAC	Total Number of Dominant
3. Liquidambar styraciflua	15%	YES	FAC	Species Across All Strata: 6 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
6				That Are OBE, I AGW, OF I AG.
		= Total Cov	er	Prevalence Index worksheet:
500 (1.1)				Total % Cover of: Multiply by:
50% of total cover: 22.5	<u>70</u> 20% of	total cover:	9 70	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20'	4.50/	VEC		FACW species x 2 =
1. Acer rubrum	15%	YES	FACW	FAC species x 3 =
2	-			FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Column Totals (A)
6.				Prevalence Index = B/A =
	15%	= Total Cov	er	Hydrophytic Vegetation Indicators:
7 5%				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 7.5%	20% of	total cover:	3 /0	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				
1. Vaccinium corymbosum				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				residing riyarophytic vegetation (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	20%	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover: <u>10%</u>	20% of	total cover:	4%	
Herb Stratum (Plot size: 20'x20')	20 /0 01	total cover.	770	Tree – Woody plants, excluding woody vines,
	20%	YES	FAC	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
_		-	17.0	(1.6 cm) of larger in diameter at prodet neight (BB11).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cov	er	
50% of total cover: 10%				
	20% of	total cover:	7/0	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hodrowkodia
		= Total Cov	 er	Hydrophytic Vegetation
F00/				Present? Yes X No
50% of total cover:		iotal cover:		
Remarks: (Include photo numbers here or on a separate sl	neet.)			

SOIL Sampling Point: DP-23

Profile Desc	ription: (Describe	to the dept	th needed to docun	nent the i	ndicator	or confirm	the absence of indicators.)				
Depth	Matrix		Redo	x Feature:	s						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks				
0-4	10YR 3/3	100			-		Sandy Loam				
4-18	10YR 7/2	90	5YR 5/8	10	С	PL	Sandy Loam				
		· 			-						
	-										
		· 			-						
1- 0.0							21				
Hydric Soil	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	s=Masked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :				
_			D 10 ((07)			-				
Histosol			Dark Surface		(CO) (N	U D A 447	2 cm Muck (A10) (MLRA 147)				
	oipedon (A2)		Polyvalue Be								
Black Hi	en Sulfide (A4)		Thin Dark Su Loamy Gleye			47, 140)	(MLRA 147, 148) Piedmont Floodplain Soils (F19)				
	d Layers (A5)		Z Depleted Mat	,	r <i>z)</i>		(MLRA 136, 147)				
	ick (A10) (LRR N)		Redox Dark S	. ,	·6)		Very Shallow Dark Surface (TF12)				
	d Below Dark Surface	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)				
	ark Surface (A12)	- (Redox Depre								
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			LRR N,					
MLRA	A 147, 148)		MLRA 13	MLRA 136)							
	Bleyed Matrix (S4)			Umbric Surface (F13) (MLRA 136, 122) ³ Indicators of hydrog							
	Redox (S5)		Piedmont Flo								
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	7) unless disturbed or problematic.				
Restrictive I	Layer (if observed):										
Type:											
Depth (in	ches):		<u> </u>				Hydric Soil Present? Yes X No No				
Remarks:							•				

Project/Site: Cumberland Cour	nty Property	City/County:	Cumberland	d County	Sampling Date: 4/30/2018		
Applicant/Owner: CWV, LLC; c/o Ja	ames H. Martin			State: VA	Sampling Point: DP-23, UPL		
Investigator(s): Shannon D. Hill		Section, Towns	ship, Range:	Tax Map #38-A-	7		
Landform (hillslope, terrace, etc.): H	illslope	Local relief (conca	ave, convex, noi	ne):	Slope (%): 2-4%		
Subregion (LRR or MLRA):n/a							
Soil Map Unit Name: Poindexter W			<u> </u>	NWI classifica			
Are climatic / hydrologic conditions on		ne of year? Yes X	No	 (If no, explain in Re			
Are Vegetation, Soil,					esent? Yes X No		
Are Vegetation, Soil,				explain any answers			
, , , , , , , , , , , , , , , , , , ,		, p	(,		- ·····-·,		
SUMMARY OF FINDINGS –	Attach site map sh	owing sampling _l	point location	ons, transects,	important features, etc.		
Hydrophytic Vegetation Present?	Yes No	X	`a				
Hydric Soil Present?	Yes No_>	X within a	Sampled Area a Wetland?	Yes	No <u>X</u>		
Wetland Hydrology Present?	Yes No _>	×					
Remarks:							
Data point was taken adjace	Int to flag G-311.						
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indicat	ors (minimum of two required)		
Primary Indicators (minimum of one	is required: check all that	annly)		Surface Soil C			
Surface Water (A1)	-	quatic Plants (B14)					
High Water Table (A2)		en Sulfide Odor (C1)		Sparsely Vegetated Concave Surface (B8)Drainage Patterns (B10)			
Saturation (A3)	· -	d Rhizospheres on Livi	ing Roots (C3)				
Water Marks (B1)		ce of Reduced Iron (C4		Dry-Season Water Table (C2)			
Sediment Deposits (B2)		Iron Reduction in Tilled		Crayfish Burro			
Drift Deposits (B3)		uck Surface (C7)	` ,	-	ible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Explain in Remarks)			essed Plants (D1)		
Iron Deposits (B5)				Geomorphic F			
Inundation Visible on Aerial Ima	gery (B7)			Shallow Aquit	ard (D3)		
Water-Stained Leaves (B9)				Microtopograp	phic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)		
Field Observations:							
Surface Water Present? Yes	No X Depth	(inches):					
	No X Depth						
Saturation Present? Yes	No X Depth	(inches):	Wetland H	Hydrology Present	? Yes NoX_		
(includes capillary fringe) Describe Recorded Data (stream ga	unae monitorina well aeri	al nhotos previous ins	nections) if ava	ailahle.			
Besonse Resorded Bala (Stream ga	age, morntoning wen, acri	ai priotos, previous iris	poonons), ii ave	andbio.			
Remarks:							
Komarks.							

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-23, UPL
001-001	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')	% Cover	Species?		Number of Dominant Species
1. Quercus alba	25%	YES	FACU	That Are OBL, FACW, or FAC: 0 (A)
2. Liriodendron tulipfera	25%	YES	FACU	Total Number of Dominant
3. Quercus velutina	20%	YES	<u>FACU</u>	Species Across All Strata: 5 (B)
4				Descent of Deminent Species
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)
6				
	70%	= Total Cov	er	Prevalence Index worksheet:
50% of total cover: 30%	200/ of	total agyar:	12%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	20 /6 01	iolai covei.		OBL species 0 x 1 = 0
4 Juniparus virginians	200/	VEC	EACH	FACW species <u>0</u> x 2 = <u>0</u>
Juniperus virginiana Quercus alba	20% 10%	YES	FACU	FAC species <u>0</u> x 3 = <u>0</u>
	10%	YES	FACU	FACU species 100 x 4 = 400
3				UPL species 0 x 5 = 0
4				Column Totals:100 (A) 400 (B)
5				
6				Prevalence Index = B/A = 4.00
	30%	= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:15%	20% of	total cover:	6%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1				(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5.				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
				Harb All barbarasas (and analysis de la de
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				,,
		= Total Cov	er	
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5		Total O		Hydrophytic
		= Total Cov		Vegetation Present? Yes No X
50% of total cover:	20% of	total cover:		169 100 / 1
Remarks: (Include photo numbers here or on a separate si	heet.)			

Sampling Point: DP-23, UPL

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist) % Type ¹	Loc ²	Texture		Remarl	ko
0-4	10YR 5/4	100	Color (moist) // Type	LUC			Neman	NS
	-				Sandy L			
4-18	10YR 6/4	100			Sandy C.	<u>Loam</u>		
_								
	noontration D_Day	olotion DM	Reduced Matrix, MS=Masked Sand Grain		² l coation	: PL=Pore Lir	ina M-Mot	riv
	Indicators:	pielion, Rivi=	Reduced Matrix, MS=Masked Sand Grain	15.				Hydric Soils ³ :
_ Histosol			Dark Surface (S7)			_ 2 cm Muck		-
	oipedon (A2)		Polyvalue Below Surface (S8) (ML	RA 147.	148)	Coast Prairi		
Black His			Thin Dark Surface (S9) (MLRA 147			(MLRA 1		,
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	•		_ Piedmont F		oils (F19)
Stratified	d Layers (A5)		Depleted Matrix (F3)			(MLRA 1	36, 147)	
	ick (A10) (LRR N)		Redox Dark Surface (F6)			_ Very Shallo		
	d Below Dark Surfac	ce (A11)	Depleted Dark Surface (F7)		_	Other (Explanation	ain in Rema	rks)
	ark Surface (A12)	I DD N	Redox Depressions (F8)	ND N				
	lucky Mineral (S1) (\ 147, 148)	LKK N,	Iron-Manganese Masses (F12) (LF MLRA 136)	KK N,				
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136,	122)		Indicators of h	ovdrophytic	vegetation and
	tedox (S5)		Piedmont Floodplain Soils (F19) (N			wetland hydr		-
						unless disturl		
Stripped	Matrix (S6)		Red Parent Material (FZT) (MLRA	121, 171				
_ Stripped estrictive L	_ayer (if observed)):	Red Parent Material (F21) (MLRA	121, 171	, 			
				127, 147				
estrictive L	_ayer (if observed)			121, 141		Soil Present?	Yes	No_×
Type: Depth (inc	_ayer (if observed)			127, 147			Yes	No ×
Type: Depth (inc	_ayer (if observed)						Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 171			Yes	No_X
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u></u> ×
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u></u> ×
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No <u></u> ×
Type: Depth (inc	_ayer (if observed)			121, 131			Yes	No <u></u> ×
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No X
Type: Depth (inc	_ayer (if observed)			121, 131			Yes	No <u>×</u>
Type: Depth (inc	_ayer (if observed)			121, 141			Yes	No X
estrictive L	_ayer (if observed)						Yes	No X
estrictive L Type: Depth (inc	_ayer (if observed)			121, 131			Yes	No X
estrictive L Type: Depth (inc	_ayer (if observed)						Yes	No X
estrictive L Type: Depth (inc	_ayer (if observed)						Yes	No X
Type: Depth (inc	_ayer (if observed)						Yes	No <u>×</u>
estrictive L Type: Depth (inc	_ayer (if observed)						Yes	No X

Project/Site: Cumberland	County Property	City/C	ounty: Cumberla	nd County	Sampling Date: 4/30/2018
Applicant/Owner: CWV, LLC;			,		Sampling Point: DP-24
Investigator(s): Shannon D		Section	on, Township, Range:		
	tc.): Floodplain	L ocal reli	ef (concave, convex, r	none):	Slope (%):1-3%
Subregion (LRR or MLRA):					Datum:
Soil Map Unit Name: Chewa	cla and Monocan soils/	Poindexter Wedowe		NWI classific	
Are climatic / hydrologic condi				(If no, explain in F	
Are Vegetation, Soil					present? Yes X No
Are Vegetation, Soil		-		l, explain any answe	
Are vegetation, Soil	, or riyurology	naturally problems	alic: (Il lieedec	i, explain any answe	ers in Nemarks.)
SUMMARY OF FINDIN	GS – Attach site m	ap showing sam	pling point locat	ions, transects	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes X	_ No	Is the Sampled Area		
Hydric Soil Present?	Yes X	No	within a Wetland?	$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	Yes X	No			
Remarks:		<u> </u>			
D () ()	0.007				
Data point was taken	next to flag G-327.				
HYDROLOGY					
Wetland Hydrology Indicat	ors.			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum		(all that annly)		Surface Soil	
Surface Water (A1)		True Aquatic Plants (P14)		getated Concave Surface (B8)
Surface Water (A1)X High Water Table (A2)		Hydrogen Sulfide Od		Z Drainage Pa	
Saturation (A3)			es on Living Roots (C3		
Water Marks (B1)		Presence of Reduced	=		Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Bur	
Drift Deposits (B3)		Thin Muck Surface (C		-	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Rer			Stressed Plants (D1)
Iron Deposits (B5)	_	Other (Explain in Itel	nans)	X Geomorphic	
Inundation Visible on Ae	rial Imagery (R7)			Shallow Aqu	
X Water-Stained Leaves (I	• , , ,				aphic Relief (D4)
Aquatic Fauna (B13)	39)			FAC-Neutra	
Field Observations:				1701104114	1 1 1 2 3 1 2 3 1
	Vaa Na V	Donath (inch oo)			
Surface Water Present?	Yes No _X_				
Water Table Present?	Yes X No				· · · · · · · · · · · · · · · · · · ·
Saturation Present? (includes capillary fringe)	Yes No _X_	Depth (inches):	Wetland	d Hydrology Prese	nt? Yes X No
Describe Recorded Data (str	eam gauge, monitoring w	vell, aerial photos, pre	vious inspections), if a	vailable:	
Remarks:					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-24
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species
1. Platanus occidentalis	50%	YES	FACW	That Are OBL, FACW, or FAC: 6 (A)
2. Liquidambar styraciflua	10%	NO	FAC	Total Number of Dominant
3				Species Across All Strata: 7 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 85% (A/B)
6.				That Ale OBE, I AOW, OI I AO.
		= Total Cove	er	Prevalence Index worksheet:
50% -{\data} 30%				Total % Cover of: Multiply by:
50% of total cover: 30%	<u>20% of </u>	total cover:	12 /0	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20'	100/	VEC	E 4 0) 4/	FACW species x 2 =
1. Carpinus caroliniana		YES	FACW	FAC species x 3 =
2. Acer rubrum	5%	YES	<u>FAC</u>	FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Column Totals (A) (B)
6.				Prevalence Index = B/A =
-	15%	= Total Cove	er er	Hydrophytic Vegetation Indicators:
7.50				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 7.5%	20% of	total cover:	370	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				_
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3	-			data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹Indicators of hydric soil and wetland hydrology must
<u> </u>		= Total Cove		be present, unless disturbed or problematic.
				Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Vaccinium corymbosum	10%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2. Woodwardia areolata	10%	YES	FACW	Sapling – Woody plants, excluding woody vines,
3. Athyrium angustum	5%	YES	FAC	approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8			-	herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11		-		, , , , ,
	25%	= Total Cove	er	
50% of total cover: _12.5	<u>%</u> 20% of	total cover:	5%	
Woody Vine Stratum (Plot size: 20'x20')		_	<u> </u>	
1				
2				
3				
4				
5				Hydrophytic
		= Total Cove	er	Vegetation
50% of total cover:	20% of	total cover		Present? Yes X No
			·	
Remarks: (Include photo numbers here or on a separate s	neet.)			

SOIL Sampling Point: DP-24

Profile Desc	ription: (Describe	to the dept	th needed to docun	nent the i	ndicator	or confirm	the absence of indicators.)
Depth	Matrix		Redo	x Features	s		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 3/3	100			-		Sandy Loam
4-18	10YR 7/2	90	7.5YR 6/6	10	С	PL	Sandy Loam
					-		
	-						
		·		·	·		
					-		
		· 			-		
1- 0.0							21
Hydric Soil	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	s=Masked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
_			5 10 ((07)			
Histosol			Dark Surface		(CO) (N	U D A 447	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				
Black Hi	en Sulfide (A4)		Thin Dark Su Loamy Gleye			47, 140)	(MLRA 147, 148) Piedmont Floodplain Soils (F19)
	d Layers (A5)		Z Depleted Mat	,	r <i>z)</i>		(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S	. ,	·6)		Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)
	ark Surface (A12)	- (Redox Depre				
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			LRR N,	
MLRA	A 147, 148)		MLRA 13	6)			
	Bleyed Matrix (S4)		Umbric Surfa				³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	7) unless disturbed or problematic.
Restrictive I	Layer (if observed):						
Type:							
Depth (in	ches):		<u> </u>				Hydric Soil Present? Yes X No No
Remarks:							•

Project/Site: Cumberland	I County Prope	rty	City/0	County: Cum	berland C	County S	sampling Date:	4/30/2018
Applicant/Owner: CWV, LLC				· —		State: VA	–	
Investigator(s): Shannon D	. Hill		Secti	on, Township, F	Range: Ta	x Map #45-A-1		<u> </u>
	tc.): Hillslope		Local re	lief (concave. co	onvex. none)	:	Slop	e (%): 4-6%
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, concurrence) Subregion (LRR or MLRA): n/a Lat: 37.574200597 Local relief (concave)						19125193		
Soil Map Unit Name: Chewa					Ŭ	_ NWI classificati		
Are climatic / hydrologic condi								
Are Vegetation, Soil			-			rcumstances" pre		√ No
Are Vegetation, Soil						lain any answers		NO
Are vegetation, Soil _	, or Hydrology	/ ''	laturally problem	auc: (II	needed, exp	nam any answers	iii Reiliaiks.)	
SUMMARY OF FINDIN	IGS – Attach si	te map	showing sar	npling point	tlocations	s, transects, i	mportant fe	atures, etc.
Hydrophytic Vegetation Pres	sent? Yes _	N	o_X	Is the Sample	ed Area			
Hydric Soil Present?		N		within a Wetl		Yes	No <u>X</u>	_
Wetland Hydrology Present?	Yes _	N	o <u>X</u>					
Remarks:								
Data point was taken	adjacent to flag	G-327.						
HYDROLOGY								
	orol					econdary Indicato	ro (minimum of t	huo roquirod)
Wetland Hydrology Indicat		ahaak all t	that apply)			-		.wo required)
Primary Indicators (minimum	or one is required;			(D4.4)	Surface Soil Cracks (B6)			
Surface Water (A1)			Aquatic Plants		Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)			rogen Sulfide Od			_ Drainage Patte		
Saturation (A3)			dized Rhizospher		oots (C3)	_ Moss Trim Line		
Water Marks (B1)			sence of Reduce			_ Dry-Season Wa		
Sediment Deposits (B2)			ent Iron Reduction			Crayfish Burrov	ole on Aerial Ima	ngony (CO)
Drift Deposits (B3) Algal Mat or Crust (B4)			er (Explain in Re		_		ssed Plants (D1	
Iron Deposits (B5)		Out	er (Explain in ite	marks)	_	_ Stanted of Stre _ Geomorphic Po		,
Inundation Visible on Ae	erial Imagery (B7)				_	Shallow Aquita		
Water-Stained Leaves (_	_ Microtopograph		
Aquatic Fauna (B13)	50)				_	_ FAC-Neutral Te		
Field Observations:				1			561 (20)	
Surface Water Present?	Yes No	X Der	oth (inches):					
Water Table Present?	Yes No							
Saturation Present?	Yes No _				Notland Hye	Irology Present?	Vos	No X
(includes capillary fringe)	163100_		otti (iiiciies)		rvetianu riyo	irology r resent:	163	NO
Describe Recorded Data (str	eam gauge, monito	ring well, a	aerial photos, pre	evious inspectio	ns), if availal	ble:		
Remarks:								

/EGETATION (Five Strata) – Use scientific n	ames of	plants.		Sampling Point: DP-24, UPL
201/201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	20%	YES	FACU	That Are OBL, FACW, or FAC: 2 (A)
2. Fagus grandifolia	25%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 33% (A/B)
6				Prevalence Index worksheet:
		= Total Cove		Total % Cover of: Multiply by:
50% of total cover: 22.	5% 20% of	total cover:	9%	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20'				FACW species 0 x 2 = 0
1. Ilex opaca	15%	YES	FAC	FAC species 25 x 3 = 75
2. Acer rubrum	10%	YES	FAC	FACU species 75 x 4 = 300
3				UPL species 0 x 5 = 0
4				
5				Column Totals: (A) (B)
6				Prevalence Index = B/A = 3.75
	25%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover:12.				1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')	<u>20%</u> 01	iolai cover.		2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	15%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2				Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4	· - <u></u>			than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				it (1111) in noight.
11				Woody vine – All woody vines, regardless of height.
•		= Total Cove		
7.50				
50% of total cover: 7.5%	<u>20% of </u>	total cover:	3%	
Woody Vine Stratum (Plot size: 20'x20') Smilax rotundifolia	15%	VE0	E40	
'· <u> </u>		YES	<u>FAC</u>	
2				
3	· 			
4				
5				Hydrophytic
	15%	= Total Cove	er	Vegetation
50% of total cover:7.5	5 <u>%</u> 20% of	total cover:	3%	Present? Yes No X
Remarks: (Include photo numbers here or on a separate	sheet.)			I.
· · · ·	,			

Sampling Point: DP-24, UPL

Depth	Matrix		Redox Features	-2 December
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Lo	c ² Texture Remarks
0-6	10YR 5/3	100		Sandy Loam_
6-18	10YR 6/4	100		Sandy Loam
	-			
				· · · · ·
				<u> </u>
				
				
				
		pletion, RM=R	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
ydric Soil	Indicators:			Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Below Surface (S8) (MLRA	
	stic (A3)		Thin Dark Surface (S9) (MLRA 147, 1	
	en Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	d Layers (A5) ick (A10) (LRR N)		Depleted Matrix (F3)	(MLRA 136, 147)
	d Below Dark Surfa	ιςο (Δ11)	Redox Dark Surface (F6)Depleted Dark Surface (F7)	<pre> Very Shallow Dark Surface (TF12) Other (Explain in Remarks)</pre>
	ark Surface (A12)	(/(1/)	Redox Depressions (F8)	Onlor (Explain in Remaille)
	fucky Mineral (S1)	(LRR N,	Iron-Manganese Masses (F12) (LRR	N,
	A 147, 148)	,	MLRA 136)	,
	Bleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 12	2) ³ Indicators of hydrophytic vegetation and
_ Sandy R	Redox (S5)		Piedmont Floodplain Soils (F19) (MLF	RA 148) wetland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (MLRA 127	7, 147) unless disturbed or problematic.
estrictive l	Layer (if observed	l):		
Type:			<u> </u>	
Depth (in	ches):			Hydric Soil Present? Yes No X
emarks:				-

Project/Site: Cumberland	County Property	City/C	county: Cumberlar	nd County	Sampling Date: 4/30/2018
Applicant/Owner: CWV, LLC;			,		Sampling Point: DP-25
Investigator(s): Shannon D		Section	on, Township, Range:		——————————————————————————————————————
	tc.): Floodplain	L ocal reli	ef (concave, convex, r	ione):	Slope (%):1-3%
					Datum:
Soil Map Unit Name: Chewa	cla and Monocan soils/	Poindexter Wedowe		NWI classific	
Are climatic / hydrologic condi				(If no, explain in F	
Are Vegetation, Soil					present? Yes X No
Are Vegetation, Soil				l, explain any answe	
Are vegetation, Soil	, or riyurology	naturally problems	alic: (II rieeded	i, explain any answe	is in Nemarks.)
SUMMARY OF FINDIN	GS – Attach site m	ap showing sam	pling point locat	ions, transects	s, important features, etc.
Hydrophytic Vegetation Pres	ent? Yes X	No	Is the Sampled Area	,	
Hydric Soil Present?	Yes X		within a Wetland?	$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	-	No			
Remarks:		<u> </u>			
D () ()					
Data point was taken	next to flag G-437.				
HYDROLOGY					
Wetland Hydrology Indicat	ore.			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum		(all that apply)		Surface Soil	
			D4.4\	- · · · · · · · · · · · · · · · · · · ·	getated Concave Surface (B8)
Surface Water (A1) X High Water Table (A2)		True Aquatic Plants (Sparsely ve Drainage Pa	=
		Hydrogen Sulfide Od	or (C1) es on Living Roots (C3		
Saturation (A3)			-		
Water Marks (B1)Sediment Deposits (B2)		Presence of Reduced Recent Iron Reductio		Crayfish Bur	Water Table (C2)
Drift Deposits (B3)		Thin Muck Surface (C			riows (C8) /isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Rer			Stressed Plants (D1)
Iron Deposits (B5)	_	Other (Explain in Nei	ilaiks)	Stuffled of S X Geomorphic	
Inundation Visible on Ae	rial Imagery (R7)			Shallow Aqu	
X Water-Stained Leaves (I	• , , ,				aphic Relief (D4)
Aquatic Fauna (B13)	J9)			FAC-Neutra	
Field Observations:			Ī	TAC-Neutra	Trest (D3)
	Vaa Na V	Donath (inch oo)			
Surface Water Present?	Yes No _X_				
Water Table Present?	Yes X No				· · · · · · · · · · · · · · · · · · ·
Saturation Present? (includes capillary fringe)	Yes No _X_	Depth (inches):	Wetland	l Hydrology Prese	nt? Yes X No
Describe Recorded Data (str	eam gauge, monitoring w	vell, aerial photos, pre	vious inspections), if a	vailable:	
Remarks:					
					ļ

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-25
201/201	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Betula nigra	20%	<u>YES</u>	FACW	That Are OBL, FACW, or FAC: 6 (A)
2. Acer rubrum	5%	YES_	<u>FAC</u>	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				
	25%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 12.5	% 20% of	total cover:	5%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	<u>/0</u> 20/001	total cover.		OBL species x 1 =
	20%	YES	FACW	FACW species x 2 =
				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				
6				Prevalence Index = B/A =
	20%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover: 10%	20% of	total cover:	4%	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 20'x20')			•	2 - Dominance Test is >50%
1. Alnus serrulata	20%	VEC	FACW	3 - Prevalence Index is ≤3.0 ¹
· ·				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	20%	= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1. Athyrium angustum	20%	YES	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2				Continue Manda de control din escado di control
3				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
				than 3 in. (7.6 cm) DBH.
4				Charle Manager and and an analysis and an analysis and
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
11				woody vine – All woody vines, regardless of height.
	20%	= Total Cove	er	
50% of total cover: _10%	20% of	total cover:	5%	
Woody Vine Stratum (Plot size: 20'x20')	2070 01	total oover.		
	1 = 0/	VEC	EACW	
2				
3				
4				
5				Hydrophytic
	15%	= Total Cove	er	Vegetation
50% of total cover:	20% of	total cover		Present? Yes X No
			_	<u>l</u>
Remarks: (Include photo numbers here or on a separate sh	neet.)		_	

SOIL Sampling Point: DP-25

Depth	Matrix			K Features			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 4/2	100					Sandy Loam
4-18	10YR 6/2	85	5YR 5/6	15	С	PL	Sandy Loam
	-						
1Typo: C-C	oncontration D-Do	nlotion PM	=Reduced Matrix, MS	-Mackad 9	Sand Gra	inc	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil		pielion, Kivi	=Reduced Matrix, Mc	=iviaskeu s	Sariu Gra	1115.	Indicators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)			2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		e (S8) (M	LRA 147,	
	stic (A3)		Thin Dark Su				(MLRA 147, 148)
Hydroge	en Sulfide (A4)		Loamy Gleye			•	Piedmont Floodplain Soils (F19)
Stratified	d Layers (A5)		X Depleted Mat	rix (F3)			(MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark S	,	•		Very Shallow Dark Surface (TF12)
	d Below Dark Surfa	ce (A11)	Depleted Dar				Other (Explain in Remarks)
	ark Surface (A12)	(LDD N	Redox Depre			DD N	
	Mucky Mineral (S1)	LKK N,	Iron-Mangane		6 (F12) (L	.KK N,	
	A 147, 148) Gleyed Matrix (S4)		MLRA 136 Umbric Surfa	•	II D A 13	3 122)	³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent M				
	Layer (if observed):			, ,		,
Type:							
Depth (in	ches):						Hydric Soil Present? Yes X No
Remarks:	, -						

Project/Site: Cumberland	County Pro	perty	Citv/C	County: Cumber	land County	_ Sampling Date: 4/30/2018		
Applicant/Owner: CWV, LLC						Sampling Point: <u>DP-25, UPL</u>		
Investigator(s): Shannon D			Section Section	on, Township, Rang	e. Tax Map #45-	——		
• , ,	c.) Hillslope/7	ne of S	Slope Local rel	ief (concave, conve	c none).	Slope (%): 3-5%		
Soil Map Unit Name: Chewa								
Are climatic / hydrologic condit								
Are Vegetation, Soil			-			present? Yes X No		
-	-		-					
Are Vegetation, Soil	, or Hydroid	ogy	naturally problema	atic? (if need	led, explain any answ	ers in Remarks.)		
SUMMARY OF FINDIN	GS – Attach	site m	nap showing san	npling point loc	ations, transect	s, important features, etc.		
Hydrophytic Vegetation Pres	ent? Yes	5	NoX	Is the Sampled A	rea			
Hydric Soil Present?			No_X	within a Wetland		No <u> </u>		
Wetland Hydrology Present?	Yes	s	No X					
Remarks:								
			_					
Data point was taken	adjacent to fla	g G-43	37.					
HYDROLOGY								
					On an allow to dea	and the second second second second		
Wetland Hydrology Indicat						cators (minimum of two required)		
Primary Indicators (minimum	of one is require			(5.4.1)	Surface Soi			
Surface Water (A1)			True Aquatic Plants (Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)			Hydrogen Sulfide Od		-	atterns (B10)		
Saturation (A3)			Oxidized Rhizospher					
Water Marks (B1)			Presence of Reduced			Water Table (C2)		
Sediment Deposits (B2)			Recent Iron Reduction		-			
Drift Deposits (B3)			Thin Muck Surface (C			Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)			Other (Explain in Rer	marks)		Stressed Plants (D1)		
Iron Deposits (B5)						c Position (D2)		
Inundation Visible on Ae)			Shallow Aq			
Water-Stained Leaves (I	39)					raphic Relief (D4)		
Aquatic Fauna (B13)				,	FAC-Neutra	il Test (D5)		
Field Observations:		~						
Surface Water Present?			Depth (inches):					
Water Table Present?			Depth (inches):					
Saturation Present?	Yes N	0 <u>X</u>	Depth (inches):	Wetla	ind Hydrology Prese	ent? Yes No _X_		
(includes capillary fringe) Describe Recorded Data (str	eam gauge, mor	nitorina v	well, aerial photos, pre	evious inspections). i	f available:			
· ·	3 3 ,	J	, , , , , , ,	, ,,				
Remarks:								
rtomanto.								

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-25, UPL
201/201	Absolute	Dominant		Dominance Test worksheet:
,		Species?		Number of Dominant Species
1. Liriodendron tulipfera	20%	YES	FACU	That Are OBL, FACW, or FAC: 0 (A)
2. Fagus grandifolia	25%	YES	FACU	Total Number of Dominant
3. Quercus alba	20%	YES	<u>FACU</u>	Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6				- , ,
	65%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 32.5	% _{20% of}	total cover:	13%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20')	_	_		OBL species 0 x 1 = 0
	15%	YES	FACU	FACW species 0 $x = 0$
2				FAC species 0 x 3 = 0
3				FACU species 100 x 4 = 400
4				UPL species 0 x 5 = 0
5				Column Totals: <u>100</u> (A) <u>400</u> (B)
6				Prevalence Index = B/A = 4.00
0		= Total Cove	or or	Hydrophytic Vegetation Indicators:
7 5%				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 7.5%	<u>20% ot</u>	total cover:	370	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				_
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	ər	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree Weeds plants evaluding weeds wines
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Polystichum acrostichoides	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2		<u> </u>		Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4.				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
10				ft (1 m) in height.
11.				Woody vine – All woody vines, regardless of height.
		= Total Cove		
400/				
50% of total cover: 10%	20% of	total cover:	4%_	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hydrophytic
	:	= Total Cove	er	Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No X
Remarks: (Include photo numbers here or on a separate sh				
(,			

Sampling Point: DP-25, UPL

Depth (in all as)	Matrix	0/	Redox Features	Tandona
inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc ²	Texture Remarks
0-4	10YR 5/2	100		Sandy Loam
4-12	10YR 6/3	100		Sandy Loam
12-18	10YR 6/4	100		Sandy C. Loam
				
		mletien DM D	adversed Matrix, MC, Marshad Cond Coning	21 and in the Daniel Lining M. Matrice
ype: C=Co ydric Soil I		epietion, Rivi=R	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Below Surface (S8) (MLRA 147,	
Black His			Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
_ Hydroger	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
	Below Dark Surfa	ice (A11)	Depleted Dark Surface (F7)	Other (Explain in Remarks)
	rk Surface (A12) ucky Mineral (S1)	/I DD N	Redox Depressions (F8)Iron-Manganese Masses (F12) (LRR N,	
	147, 148)	(LKK N,	MLRA 136)	
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Floodplain Soils (F19) (MLRA 148	
_ Stripped	Matrix (S6)		Red Parent Material (F21) (MLRA 127, 147)	unless disturbed or problematic.
estrictive L	ayer (if observed	l):		
Туре:			_	
Type: Depth (inc	:hes):		-	Hydric Soil Present? Yes No _X
Depth (inc	ches):			Hydric Soil Present? Yes No _X
Depth (inc	rhes):		- 	Hydric Soil Present? Yes No X
Depth (inc	hes):			Hydric Soil Present? Yes No _X
Depth (inc	hes):			Hydric Soil Present? Yes No X
Depth (inc	hes):			Hydric Soil Present? Yes No X
Depth (inc	hes):			Hydric Soil Present? Yes No _X
Depth (inc	hes):			Hydric Soil Present? Yes No _X
Depth (inc	hes):			Hydric Soil Present? Yes No _X
Depth (inc	rhes):			Hydric Soil Present? Yes No X
Depth (inc	rhes):			Hydric Soil Present? Yes No _X
Depth (inc	thes):			Hydric Soil Present? Yes No _X
Depth (inc	hes):			Hydric Soil Present? Yes No _X
Depth (inc	hes):			Hydric Soil Present? Yes No _X
Depth (inc	rhes):			Hydric Soil Present? Yes No X
Depth (inc	ches):			Hydric Soil Present? Yes No _X
Depth (inc	rhes):			Hydric Soil Present? Yes No _X
	hes):			Hydric Soil Present? Yes No _X
Depth (inc	hes):			Hydric Soil Present? Yes No _X
Depth (inc	rhes):			Hydric Soil Present? Yes No _X
Depth (inc	rhes):			Hydric Soil Present? Yes No _X
Depth (inc	ches):			Hydric Soil Present? Yes No _X
Depth (inc	ehes):			Hydric Soil Present? Yes No _X

Project/Site: Cumberland	Coun	ty Pı	operty	City/C	County:	Cumberla	nd County	Sampling Date: 4/30/	2018
Applicant/Owner: CWV, LLC;					, _			Sampling Point: DP	
Investigator(s): Hannah L. I				Section Section	on. Town	ship. Range:		 A-7	
Landform (hillslope, terrace, et		oodpla	ain	Local rel	ief (conc	ave. convex. r	none):	Slope (%):	0-2%
Subregion (LRR or MLRA): _n	/a		Lat	37.580490500	(Long: -	78.115965775	Datum:	
Soil Map Unit Name: Chewar	cla and	Mone	ocan soils	· 			NWI classifi		
Are climatic / hydrologic condit					/os X		(If no, explain in I		
Are Vegetation, Soil								present? Yes X	2
Are Vegetation, Soil							l, explain any answ		,
-		-							
SUMMARY OF FINDIN	GS – F	Attac	h site m	nap showing san	npling	point locat	ions, transects	s, important features	s, etc.
Hydrophytic Vegetation Pres	ent?	,	res X	No	le the	Sampled Area	_		
Hydric Soil Present?			res X			a Wetland?	$_{Yes}$ $ imes$	No	
Wetland Hydrology Present?			res X						
Remarks:					l				
5			o ==						ļ
Data point was taken i	next to	tlag	O-55.						
HYDROLOGY									
Wetland Hydrology Indicate							Secondary Indic	ators (minimum of two req	<u>uired)</u>
Primary Indicators (minimum	of one is	s requ	uired; chec	k all that apply)				l Cracks (B6)	
X Surface Water (A1)				True Aquatic Plants (egetated Concave Surface	(B8)
X High Water Table (A2)				Hydrogen Sulfide Od			X Drainage Pa		
X Saturation (A3)			_	Oxidized Rhizospher	es on Liv	ring Roots (C3	\times Moss Trim L	₋ines (B16)	
Water Marks (B1)			_	Presence of Reduced	d Iron (C4	4)	Dry-Season	Water Table (C2)	
Sediment Deposits (B2)				Recent Iron Reduction		d Soils (C6)	Crayfish Bu		
Drift Deposits (B3)			_	Thin Muck Surface (0	C7)		Saturation \	isible on Aerial Imagery (C	29)
Algal Mat or Crust (B4)			_	Other (Explain in Rer	marks)			Stressed Plants (D1)	
Iron Deposits (B5)							X Geomorphic	` '	
Inundation Visible on Ae	_	gery (I	37)				Shallow Aqu		
X Water-Stained Leaves (E	39)						Microtopogr	aphic Relief (D4)	
Aquatic Fauna (B13)							FAC-Neutra	I Test (D5)	
Field Observations:									
Surface Water Present?				_ Depth (inches): <u>0"</u>					
Water Table Present?	Yes _	X	No	Depth (inches): 4"					
Saturation Present?	Yes_	X	No	_ Depth (inches):2"		Wetland	l Hydrology Prese	nt? Yes $\underline{\hspace{1cm} \hspace{1cm} hspace{1cm}\hspace{1cm}\hspace{1cm} \hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}\hspace{1cm}1$	
(includes capillary fringe) Describe Recorded Data (stre	eam gau	ıae. n	nonitoring	well, aerial photos, pre	vious ins	pections), if a	vailable:		
Booding Noodiada Bata (otto	Jan gae	.go,	ioriitorii ig	won, dorial priotoc, pro	Wiodo iiie	,pootiono), ii a	valiable.		
Remarks:									
rtemants.									

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-26
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Carpinus caroliniana	10%	YES	FACW	That Are OBL, FACW, or FAC: 7 (A)
2				Total Number of Dominant
3				Species Across All Strata: 7 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
	10%	= Total Cove	er	Total % Cover of: Multiply by:
50% of total cover: 5%	20% of	total cover:	2%	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20'				FACW species x 2 =
1. Acer rubrum	15%	YES	FAC	
2				FACT species x 3 =
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6.				Prevalence Index = B/A =
·	15%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover: 7.5%				1 - Rapid Test for Hydrophytic Vegetation
	20% of	total cover:	J /0	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				3 - Prevalence Index is ≤3.0 ¹
1				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree Mandy plants avaluding woody vines
Herb Stratum (Plot size: 20'x20')				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1. Peltandra virginica	30%	YES	OBL	(7.6 cm) or larger in diameter at breast height (DBH).
2. Onoclea sensibilis	10%	YES	FACW	Sapling – Woody plants, excluding woody vines,
3. Sagitarria latifolia	10%	YES	OBL	approximately 20 ft (6 m) or more in height and less
4.Juncus effusus	15%	YES	FACW	than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
10				ft (1 m) in height.
11				Woody vine - All woody vines, regardless of height.
		= Total Cove		
22.5				
50% of total cover: 32.5	<u>70</u> 20% of	total cover:	13%	
Woody Vine Stratum (Plot size: 20'x20')				
1. Smilax rotundifolia				
2				
3				
4				
5				Hydrophytic
		= Total Cove		Vegetation
50% of total cover: 5%	20% of	total cover:	2%	Present? Yes No
Remarks: (Include photo numbers here or on a separate s		-		
, and provide the second of the second of	, ,			

SOIL Sampling Point: DP-26

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the i	ndicator	or confirm	n the absence of indicators.)
Depth	Matrix		Redo	x Feature:	S		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-4	10YR 3/3	100					Sandy Loam
4-18	10YR 6/1	80	5YR 5/8	20	С	PL	Sandy Loam
	-						
				·			
	-						
1 _T 0. 0.	tustian D Dan	lation DM	Deduced Metric MC	- Maalaa			21 postions DI Done Lining M. Matrix
Hydric Soil	oncentration, D=Dep	letion, Rivi=	Reduced Matrix, MS	s=iviasked	Sand Gra	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
_			Davis Confess	(07)			-
Histosol			Dark Surface		oo (CO) (N	II D A 447	2 cm Muck (A10) (MLRA 147)
Histic Ep	oipedon (A2)		Polyvalue Be Thin Dark Su				148) Coast Prairie Redox (A16) (MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			47, 140)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Z Depleted Mat	,	r <i>z)</i>		(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark S	. ,	:6)		Very Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Dar	,	,		Other (Explain in Remarks)
	ark Surface (A12)	,	Redox Depre				
	lucky Mineral (S1) (L	.RR N,	Iron-Mangan			_RR N,	
	A 147, 148)		MLRA 13				
Sandy G	Gleyed Matrix (S4)		Umbric Surfa				³ Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo				
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR .	A 127, 147	7) unless disturbed or problematic.
Restrictive I	Layer (if observed):						
Type:							
Depth (inc	ches):						Hydric Soil Present? Yes X No No
Remarks:							•

Project/Site: Cumberland Coul	nty Property	City/County:	Cumberland	d County	Sampling Date: 4/30/2018
Applicant/Owner: CWV, LLC; c/o Ja	ames H. Martin				Sampling Point: <u>DP-26, UPL</u>
Investigator(s): Hannah L. Miller		Section, Tow	nship, Range:	Tax Map #38-A-7	7
Landform (hillslope, terrace, etc.): H	illslope/Toe of Slope	Local relief (con	cave, convex, nor	ne):	Slope (%): 3-5%
Subregion (LRR or MLRA): n/a					Datum:
Soil Map Unit Name: Chewacla an			<u> </u>	NWI classifica	
Are climatic / hydrologic conditions or		time of year? Yes X	. No	(If no, explain in Re	
Are Vegetation, Soil,					esent? Yes X No
Are Vegetation, Soil,				explain any answers	
, regetation, cen,	<u>. </u>	atarany problemation	(onpiani any anomono	, iii riomainoly
SUMMARY OF FINDINGS –	Attach site map s	howing sampling	point location	ons, transects,	important features, etc.
Hydrophytic Vegetation Present?	Yes No) X	Sampled Area		
Hydric Soil Present?	Yes No	10 1110	n a Wetland?	Yes	No <u>X</u>
Wetland Hydrology Present?	Yes No				
Remarks:					
Data point was taken adjace	ent to flag O-55.				
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indicate	ors (minimum of two required)
Primary Indicators (minimum of one	is required: check all th	nat annly)		Surface Soil C	
Surface Water (A1)	•	Aquatic Plants (B14)			etated Concave Surface (B8)
High Water Table (A2)		ogen Sulfide Odor (C1)		Drainage Patte	
Saturation (A3)		ized Rhizospheres on L		Moss Trim Line	
Water Marks (B1)		ence of Reduced Iron (ater Table (C2)
Sediment Deposits (B2)		ent Iron Reduction in Till		Crayfish Burro	
Drift Deposits (B3)		Muck Surface (C7)	(,		ble on Aerial Imagery (C9)
Algal Mat or Crust (B4)		r (Explain in Remarks)			essed Plants (D1)
Iron Deposits (B5)		, ,		Geomorphic P	
Inundation Visible on Aerial Ima	agery (B7)			Shallow Aquita	
Water-Stained Leaves (B9)				Microtopograp	hic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral T	est (D5)
Field Observations:					
Surface Water Present? Yes	No X Dep	th (inches):			
Water Table Present? Yes	No X Dep	th (inches):			
Saturation Present? Yes	No X Dep	th (inches):	Wetland F	Hydrology Present	? Yes No <u>X</u>
(includes capillary fringe) Describe Recorded Data (stream ga	ugo monitoring well o	orial photos, provious is	annotiona) if ava	vilable:	
Describe Recorded Data (stream ga	auge, monitoring well, a	eriai priotos, previous ir	ispections), ii ava	mable.	
Domorko					
Remarks:					

/EGETATION (Five Strata) – Use scientific na	mes of	plants.		Sampling Point: DP-26, UPL
201-201	Absolute	Dominant		Dominance Test worksheet:
	% Cover	Species?		Number of Dominant Species
1. Liriodendron tulipfera	25%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Fagus grandifolia	20%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 20% (A/B)
6				
	45%	= Total Cove	er	Prevalence Index worksheet:
50% of total cover: 42.5°	% 20% of	total cover:	9%	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: 20'x20'		· •		OBL species 0 x 1 = 0
	15%	YES	FAC	FACW species 0 $x = 0$
2				FAC species 15 x 3 = 45
3				FACU species 65 x 4 = 260
4				UPL species 20 x 5 = 100
5				Column Totals: (A) (B)
6.				Prevalence Index = B/A = 4.00
·	15%	= Total Cove		Hydrophytic Vegetation Indicators:
7.50				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 7.5%	20% of	total cover:	3%	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				3 - Prevalence Index is ≤3.0 ¹
1				1 - .
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')				approximately 20 ft (6 m) or more in height and 3 in.
1. Polystichum acrostichoides	20%	YES	FACU	(7.6 cm) or larger in diameter at breast height (DBH).
2. Podophyllum peltatum	20%	YES	UPL	Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less
4				than 3 in. (7.6 cm) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11.				Woody vine – All woody vines, regardless of height.
		= Total Cove	<u></u>	
50% of total cover: 20%				
	20% 01	total cover.	0 70	
Woody Vine Stratum (Plot size: 20'x20')				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cove		Vegetation Present? Yes No
50% of total cover:	20% of	total cover:		Frescut: 165 NO / \
Remarks: (Include photo numbers here or on a separate sh	neet.)			

Sampling Point: DP-26, UPL

Depth	Matrix		Redox Features	
(inches)	Color (moist)	<u>%</u>	Color (moist) % Type ¹ Loc ²	
0-4	10YR 5/2	100		Sandy Loam
4-12	10YR 6/4	100		Sandy Loam
12-18	10YR 7/6	100		Sandy C. Loam
	_			
	ncentration D-De	nletion PM-P	educed Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
ydric Soil I		spietion, Kivi=K	educed Matrix, MS=Masked Sarid Grains.	Indicators for Problematic Hydric Soils ³ :
_ Histosol			Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Below Surface (S8) (MLRA 1	
Black His			Thin Dark Surface (S9) (MLRA 147, 148	
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ck (A10) (LRR N)	(111)	Redox Dark Surface (F6)	<pre> Very Shallow Dark Surface (TF12) Other (Explain in Remarks)</pre>
	l Below Dark Surfa irk Surface (A12)	ice (ATT)	Depleted Dark Surface (F7)Redox Depressions (F8)	Other (Explain in Remarks)
	lucky Mineral (S1)	(LRR N.	Iron-Manganese Masses (F12) (LRR N,	
	147, 148)	(,	MLRA 136)	
	leyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Floodplain Soils (F19) (MLRA	
	Matrix (S6)		Red Parent Material (F21) (MLRA 127,	unless disturbed or problematic.
	ayer (if observed	l):		
Type:			_	
	ches):		<u> </u>	Hydric Soil Present? Yes No X
Depth (inc				
Depth (inc				

Project/Site: Cumberland County	Property City/0	_{County:} Cumberlan	d County	Sampling Date: 4/31/2018
Applicant/Owner: CWV, LLC; c/o Jame	es H. Martin		State: VA	Sampling Point: DP-27
Investigator(s): Hannah L. Miller	Secti	ion, Township, Range: _	Tax Map # 38-A	A-7
Landform (hillslope, terrace, etc.): Floo	dplain Local re	lief (concave, convex, no	one):	Slope (%):1-3%
Subregion (LRR or MLRA): n/a				
Soil Map Unit Name: Chewacla and M			NWI classific	
Are climatic / hydrologic conditions on th		Yes X No	(If no, explain in R	
Are Vegetation, Soil, or H				oresent? Yes X No
Are Vegetation, Soil, or H			explain any answe	
SUMMARY OF FINDINGS – At	tach site map showing sar	npling point locati	ons, transects	, important features, etc.
Hydrophytic Vegetation Present?	Yes X No			
Hydric Soil Present?	Yes X No	Is the Sampled Area within a Wetland?	$_{Yes}$ $ imes$	No
Wetland Hydrology Present?	Yes X No	Within a Wotlana.	100	
Remarks:				
Data point was taken next to fl	ag O-294.			
LIVERGLOOV				
HYDROLOGY				
Wetland Hydrology Indicators:				tors (minimum of two required)
Primary Indicators (minimum of one is			Surface Soil	
Surface Water (A1)	True Aquatic Plants			getated Concave Surface (B8)
X High Water Table (A2)	Hydrogen Sulfide Oc		X Drainage Pat	, ,
Saturation (A3)	Oxidized Rhizospher			
Water Marks (B1)	Presence of Reduce		•	Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction		Crayfish Buri	
Drift Deposits (B3)	Thin Muck Surface (sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Re	marks)		tressed Plants (D1)
Iron Deposits (B5)	(DZ)		X Geomorphic	
Inundation Visible on Aerial Image	ry (B7)		Shallow Aqui	
Water-Stained Leaves (B9)				aphic Relief (D4)
Aquatic Fauna (B13)		1	FAC-Neutral	Test (D3)
Field Observations: Surface Water Present? Yes	No. X Donth (inches)			
	No Depth (inches): X No Depth (inches):4"			
· · · · · · · · · · · · · · · · · · ·				Y N
Saturation Present? Yes (includes capillary fringe)	No X Depth (inches):	Wetland	Hydrology Presen	t? Yes X No
Describe Recorded Data (stream gauge	e, monitoring well, aerial photos, pre	evious inspections), if av	railable:	
Remarks:				
Î.				

/EGETATION (Five Strata) – Use scientific na	mes of	olants.		Sampling Point: DP-27
	Absolute	Dominant	ndicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?	Status	Number of Dominant Species
1. Carpinus caroliniana	15%	YES	FACW	That Are OBL, FACW, or FAC: 6 (A)
2. Liquidambar styraciflua	15%	NO	FAC	Total Number of Dominant
3				Species Across All Strata: 7 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 85% (A/B)
6.				That Ald OBE, I AGW, GIT AG.
		= Total Cove	er	Prevalence Index worksheet:
15%				Total % Cover of: Multiply by:
50% of total cover: 15%	20% of	total cover:_	0 70	OBL species x 1 =
Sapling Stratum (Plot size: 20'x20')	150/	VEC	E 4 0)4/	FACW species x 2 =
1. Carpinus caroliniana	15%	YES	FACW	FAC species x 3 =
2. Acer rubrum	15%	<u>YES</u>	<u>FAC</u>	FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				Column Totals (A) (B)
6				Prevalence Index = B/A =
	30%	= Total Cove	er	Hydrophytic Vegetation Indicators:
50% of total cover: 15%				1 - Rapid Test for Hydrophytic Vegetation
	20% of	total cover:_	0 70	2 - Dominance Test is >50%
Shrub Stratum (Plot size: 20'x20')				_
1				3 - Prevalence Index is ≤3.0¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				Froblematic Hydrophytic Vegetation (Explain)
5				1
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cove	er	Definitions of Five Vegetation Strata:
FOO/ of total agreem				Deminitions of Five Vegetation Strata.
50% of total cover:	20% 01	total cover:_		Tree - Woody plants, excluding woody vines,
Herb Stratum (Plot size: 20'x20')	/		E40	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1. Athyrium angustum			FAC	(7.6 cm) of larger in diameter at breast neight (DBH).
2. Podophyllum peltatum	10%	<u>YES</u>	FACU	Sapling – Woody plants, excluding woody vines,
3				approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4				IIIan 3 III. (7.6 CIII) DBH.
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cove		
450/				
50% of total cover: 15%	20% of	total cover:	6%	
Woody Vine Stratum (Plot size: 20'x20')				
Smilax rotundifolia	10%	YES	FAC	
2				
3				
4				
5.				
-		= Total Cove	er	Hydrophytic
				Vegetation Present? Yes X No
50% of total cover: 5%	20% of	total cover:_	2%	
Remarks: (Include photo numbers here or on a separate sh	neet.)			

SOIL Sampling Point: DP-27

Profile Desc	ription: (Describe	to the dept	th needed to docun	nent the i	ndicator	or confirm	the absence of indicators.)				
Depth	Matrix		Redo	x Feature:	S						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks				
0-4	10YR 4/2	100					Sandy Loam				
4-18	10YR 7/2	90	10YR 6/6	10	С	PL	Sandy Loam				
		· ——									
	-										
	-										
		· ——									
¹ Type: C=C	oncentration, D=Dep	letion RM-	Reduced Matrix MS	S-Masked	Sand Gra		² Location: PL=Pore Lining, M=Matrix.				
Hydric Soil		ietion, ixivi=	-reduced Matrix, Mc)—IVIASKEC	i Sand Gra	ııı ı.	Indicators for Problematic Hydric Soils ³ :				
Histosol			Dark Surface	(97)			2 cm Muck (A10) (MLRA 147)				
	pipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147.					
Black Hi			Thin Dark Su				(MLRA 147, 148)				
	en Sulfide (A4)		Loamy Gleye			, -,	Piedmont Floodplain Soils (F19)				
	d Layers (A5)		X Depleted Mat	,	,		(MLRA 136, 147)				
2 cm Mu	ıck (A10) (LRR N)		Redox Dark S	Surface (F	6)		Very Shallow Dark Surface (TF12)				
	d Below Dark Surface	e (A11)	Depleted Dar				Other (Explain in Remarks)				
	ark Surface (A12)		Redox Depre								
	Mucky Mineral (S1) (L	.RR N,	Iron-Mangan		es (F12) (I	LRR N,					
	A 147, 148)		MLRA 130		MIDA 40	C 400\	31				
	Gleyed Matrix (S4) Redox (S5)			 Umbric Surface (F13) (MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 148) *Indicators of hydrophytic vegetation wetland hydrology must be present 							
	Matrix (S6)		Red Parent N								
	Layer (if observed):		Red r arent n	nateriai (i	21) (IVILIX	A 121, 141	diffess disturbed of problematic.				
Type:											
	ches):						Hydric Soil Present? Yes X No				
							Tryunc 3011 resent: Tes No				
Remarks:											

Project/Site: Cumberland County Property	City/County: Cumberland County Sampling Date: 4/31/2018
Applicant/Owner: CWV, LLC; c/o James H. Martin	State: VA Sampling Point: <u>DP-27, UPL</u>
Investigator(s): Hannah L. Miller	Section, Township, Range: Tax Map #38-A-7
5 · · · · —	ocal relief (concave, convex, none): Slope (%): 1-3%
	0227 Long:78.113907052 Datum:
Soil Map Unit Name: Chewacla and Monocan soils	NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of y	
Are Vegetation, Soil, or Hydrology significantl	
Are Vegetation, Soil, or Hydrology naturally p	
Are vegetation, our, or riverlogy naturally p	(if needed, explain any answers in remarks.)
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No_X	Is the Sampled Area
Hydric Soil Present? Yes No X	within a Wetland? Yes NoX
Wetland Hydrology Present? Yes No X	_
Remarks:	
Data point was taken adjacent to flag O-294.	
Bata point was taken adjustin to mag 5 25 i.	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic	Plants (B14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sul	fide Odor (C1) Drainage Patterns (B10)
Saturation (A3) Oxidized Rhiz	cospheres on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of R	Reduced Iron (C4) Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron R	eduction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Su	
Algal Mat or Crust (B4) Other (Explain	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes NoX_ Depth (inche	-1
Water Table Present? Yes No _X Depth (inche	· ———
Saturation Present? Yes No _X_ Depth (inche (includes capillary fringe)	s): No X
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), if available:
Remarks:	

EGETATION (Five Strata) – Use scientific na	ames of p	plants.		Sampling Point: DP-27, UPL
	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 20'x20')		Species?		Number of Dominant Species
1. Liriodendron tulipfera	20%	YES	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Fagus grandifolia	15%	YES	FACU	Total Number of Dominant
3				Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 16% (A/B)
6				Prevalence Index worksheet:
		= Total Cove		Total % Cover of: Multiply by:
50% of total cover: 17.5	<u>5%</u> 20% of	total cover:	7%	OBL species 0 x 1 = 0
Sapling Stratum (Plot size: 20'x20'				FACW species 0 x 1 = 0 x 2 = 0
1. Ilex opaca	15%	YES	FAC	
2. Fagus grandifolia		YES	FACU	FACUL species 65 x 4 = 260
3				1700 species x +
4				UPL species 20 x 5 = 100
5				Column Totals: (A) (B)
6.				Prevalence Index = B/A = 4.00
0	25%	= Total Cove		Hydrophytic Vegetation Indicators:
12.6				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: 12.5	20% of	total cover:	5%	
Shrub Stratum (Plot size: 20'x20')				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation¹ (Explain)
4				Floblemane Hydrophytic vegetation (Explain)
5				The disease of headring on it and mostle and headrance as a second
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	:	= Total Cove	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		
Herb Stratum (Plot size: 20'x20')		10101 00.0 <u>.</u>		Tree – Woody plants, excluding woody vines,
	20%	YES	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
O. Dadamhadhama maltatama	200/	YES	UPL	
	<u> </u>	160	<u> </u>	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3		-		than 3 in. (7.6 cm) DBH.
4				
5				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6				approximately 5 to 25 ft (1 to 5 ft) in neight.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Woody vines regardless of height
11				Woody vine – All woody vines, regardless of height.
		= Total Cove	er	
50% of total cover: 20%	20% of	total cover:	8%	
Woody Vine Stratum (Plot size: 20'x20')		10101 00.0	<u> </u>	
1				
2				
3				
4				
5				Hydrophytic
		= Total Cove	ər	Vegetation
50% of total cover:	20% of	total cover:		Present? Yes No_X
Remarks: (Include photo numbers here or on a separate s				
Tromanio: (moisso prioto namboro noro or on a coparato o	11001.)			

Sampling Point: DP-27, UPL

		to the depth	needed to document the indicator or conf	firm the absence of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist) % Type ¹ Loc ²	Texture Remarks
0-4	10YR 5/2	100		Sandy Loam
4-12	10YR 6/4	100		Sandy Loam
	-			<u> </u>
12-18	10YR 6/6	100		Sandy C. Loam
¹ Type: C=Ce	oncentration, D=Der	oletion. RM=R	Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil		, , , , , , , , , , , , , , , , , , , ,		Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8) (MLRA 1	47, 148) Coast Prairie Redox (A16)
Black Hi	stic (A3)		Thin Dark Surface (S9) (MLRA 147, 148	8) (MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Matrix (F3)	(MLRA 136, 147)
	ick (A10) (LRR N) d Below Dark Surfac	o (A11)	Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	e (ATT)	Depleted Dark Surface (F7)Redox Depressions (F8)	Other (Explain in Remarks)
	lucky Mineral (S1) (LRR N.	Iron-Manganese Masses (F12) (LRR N,	
	\ 147, 148)	,	MLRA 136)	,
	Gleyed Matrix (S4)		Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy R	Redox (S5)		Piedmont Floodplain Soils (F19) (MLRA	wetland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (MLRA 127,	147) unless disturbed or problematic.
Restrictive I	Layer (if observed)	:		
Type:			<u> </u>	
Depth (in	ches):		<u> </u>	Hydric Soil Present? Yes No X
Remarks:				·



DEPARTMENT OF THE ARMY

US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

August 22, 2019

PRELIMINARY JURISDICTIONAL DETERMINATION

Western Virginia Regulatory Section NAO-2018-0995 (Muddy Creek)

CWV LLC C/o James Martin P.O. Box 363 Cobbs Creek, Virginia 23035

Dear Mr. Martin:

This letter is in regard to your request for a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on project know as Green Ridge. The approximately 1300 acre project is located, north of US Route 60, Anderson Highway, near the intersection of Pine Grove Road, in Cumberland County, Virginia.

The map entitled "Wetland Delineation Map, Cumberland County, Virginia, Hamilton District", by Koontz Bryant Johnson Williams Group dated July 10, 2018 with a revision date of May 10, 2019 and Corps date stamped as received May 31, 2019 (copy enclosed) provides the locations of waters and/or wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Easter Mountain and Piedmont Region and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the

determination, or you may request and obtain an approved jurisdictional determination. This preliminary jurisdictional determination and associated wetland delineation map may be submitted with a permit application."

Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to this office, either via email at steven.a.vanderploeg@usace.army.mil or via standard mail to US Army Corps of Engineers, Regulatory Office, and ATTN: Steven VanderPloeg 9100 Arboretum Parkway, Suite 235, Richmond Virginia 23510 within 30 days of receipt and keep one for your records. This delineation of waters and/or wetlands can be relied upon for no more than five years from the date of this letter. New information may warrant revision.

If you have any questions, please contact Steven VanderPloeg either via telephone at (804) 323-7071 or via email at steven.a.vanderploeg@usace.army.mil.

Sincerely,

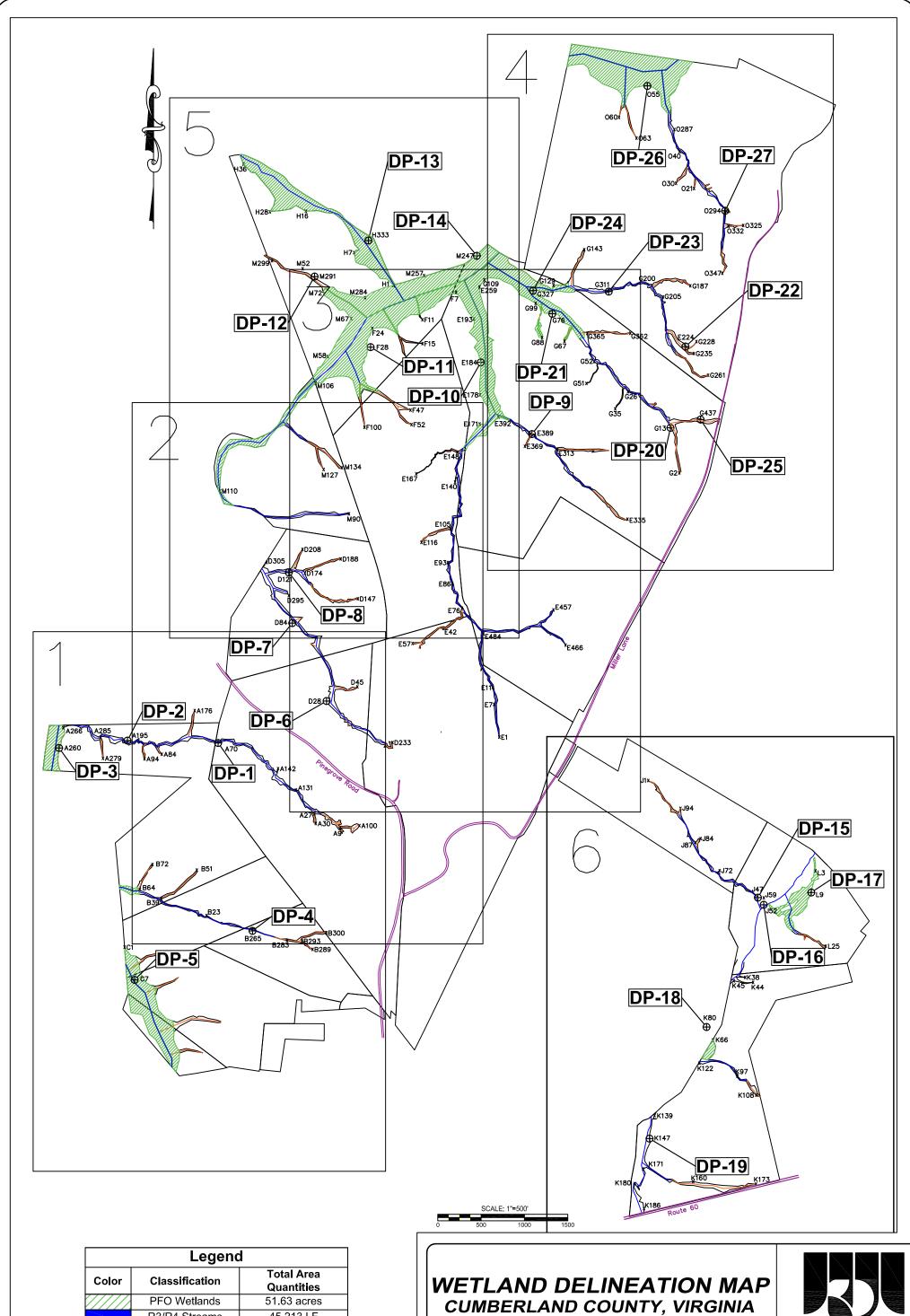
Steven VanderPloeg

Project Manager

Western Virginia Regulatory Section

Enclosure(s):
Delineation Map
Preliminary Jurisdictional Determination Form

Cc: Mr. Brent Johnson Koontz Bryant Johnson Williams Group Justin Brown, Virginia Department of Environmental Quality

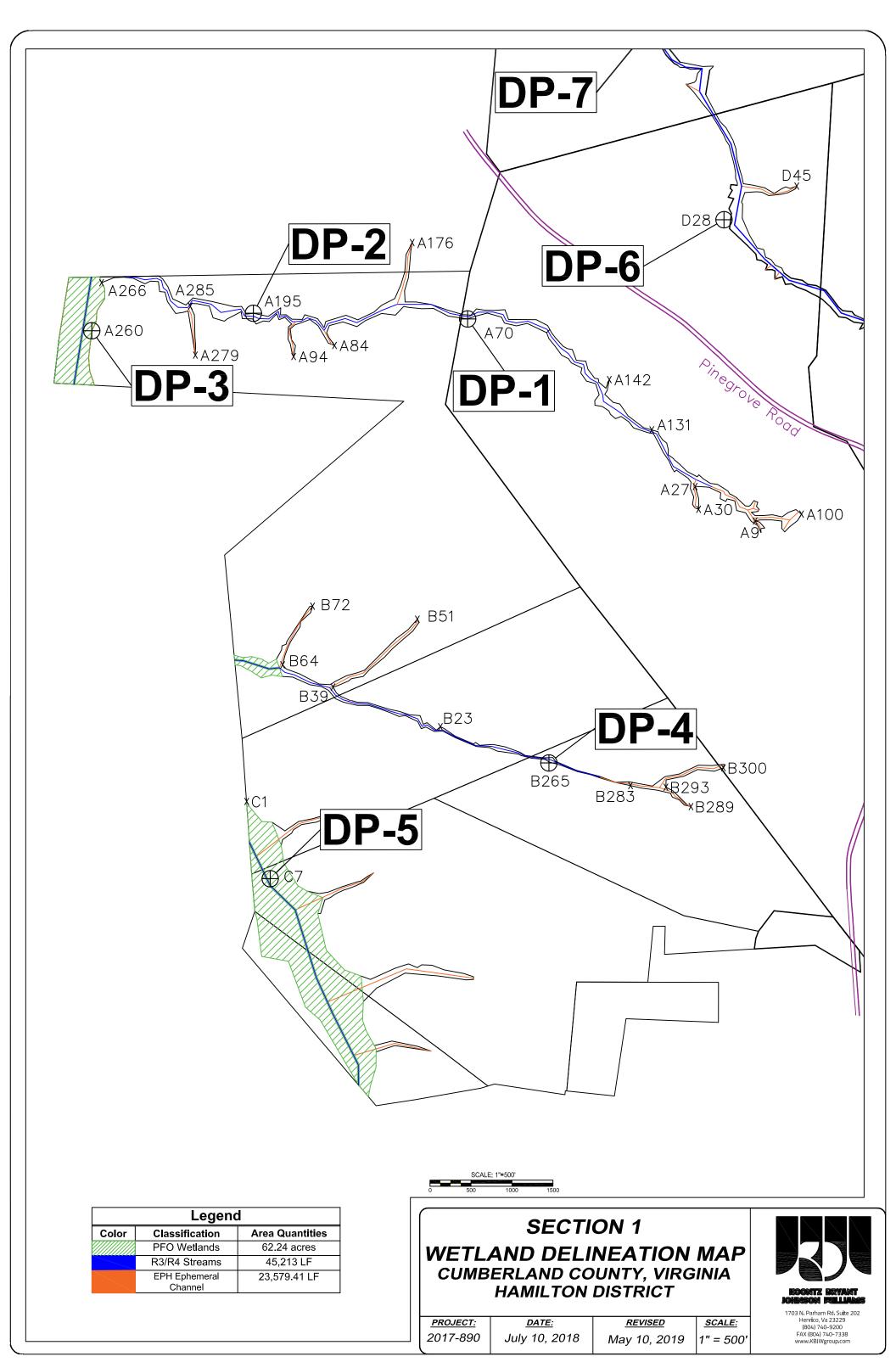


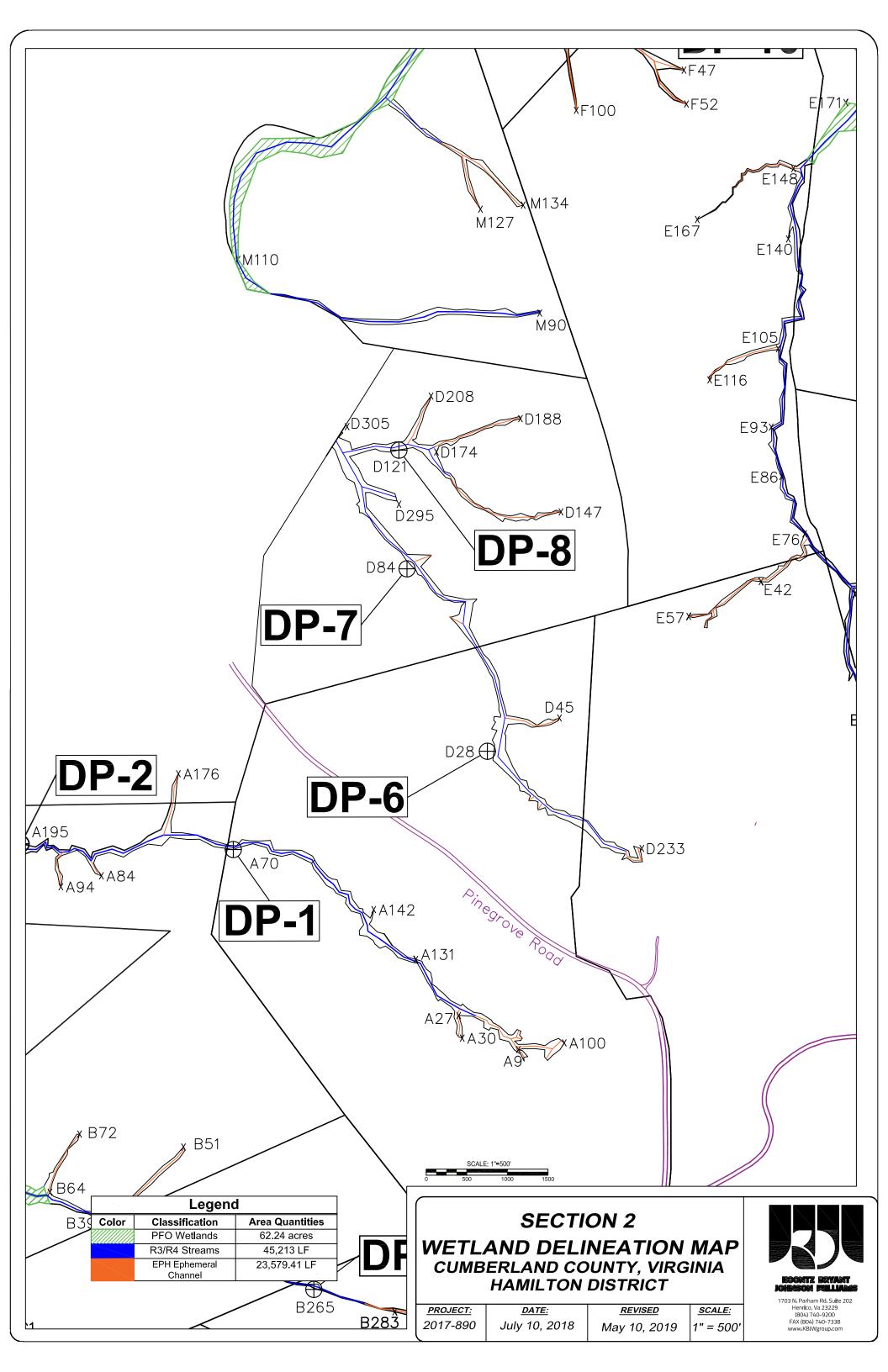
R3/R4 Streams 45,213 LF **HAMILTON DISTRICT** EPH Ephemeral 24,235 LF

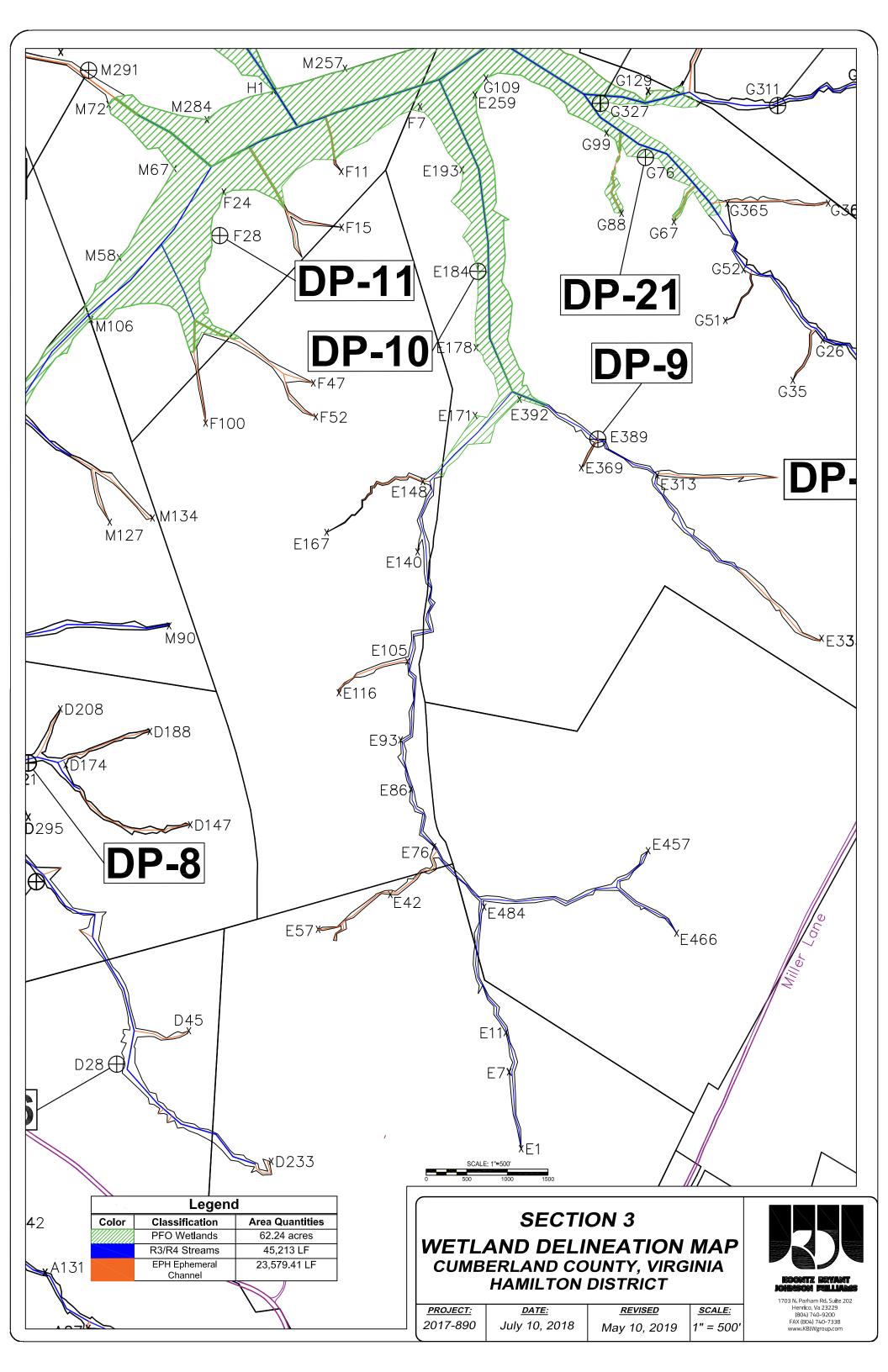
Channel

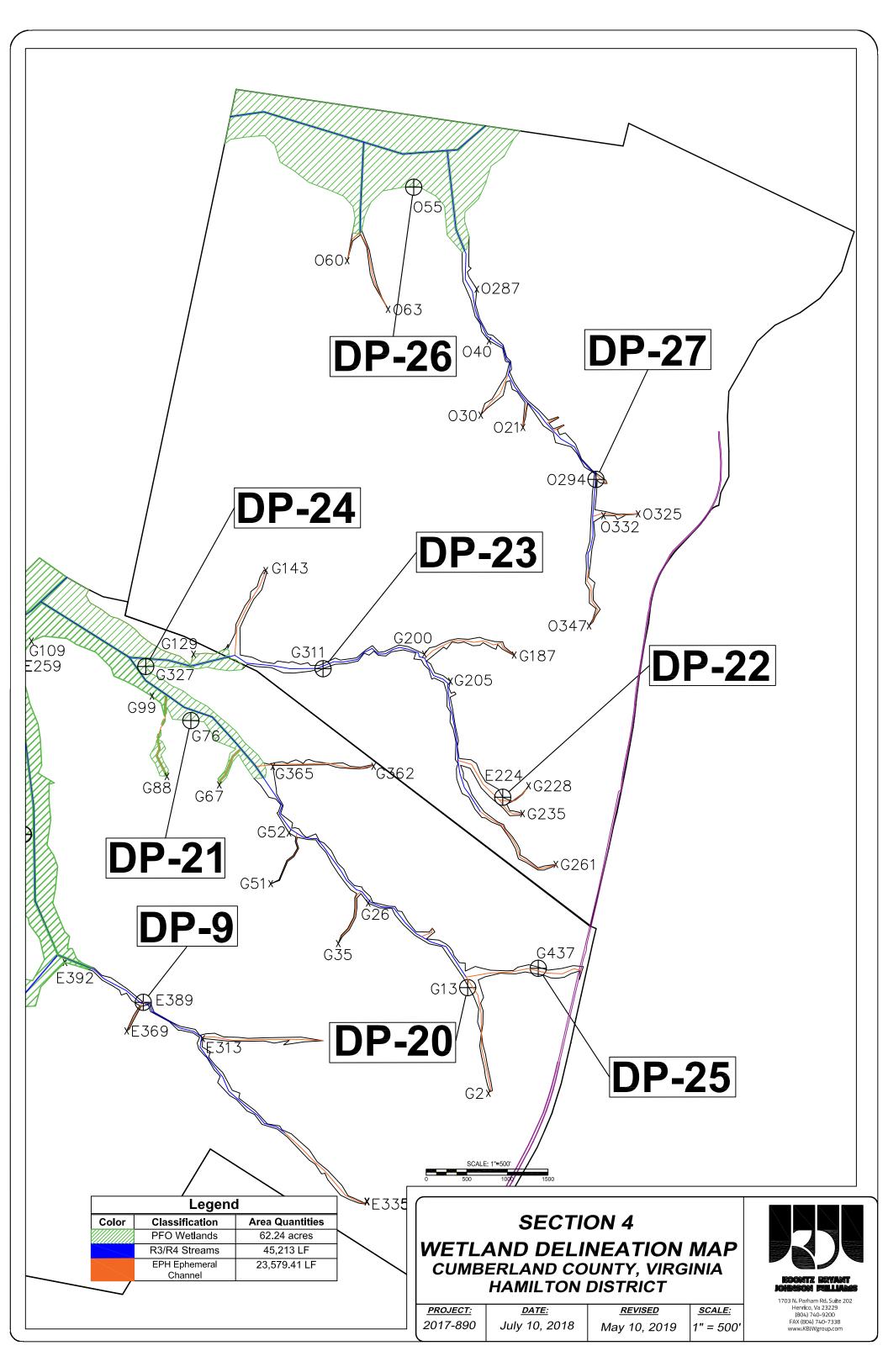


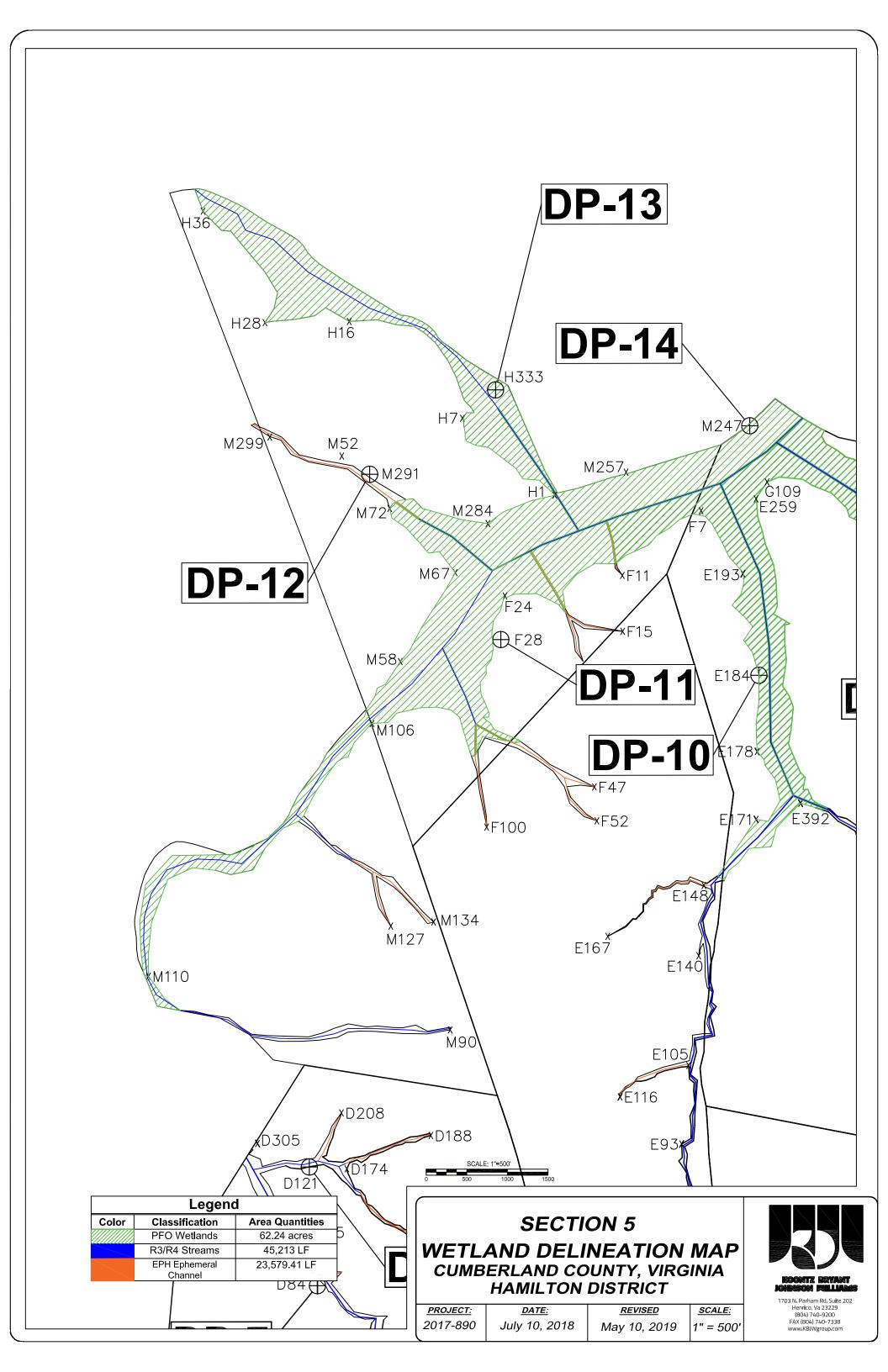
PROJECT: DATE: <u>REVISED</u> SCALE: 2017-890 Aug 22, 2018 May 31, 2019 1" = 500' 1703 N. Parham Rd. Suite 202 Henrico, Va 23229 (804) 740–9200 FAX (804) 740–7338 www.KBJWgroup.com

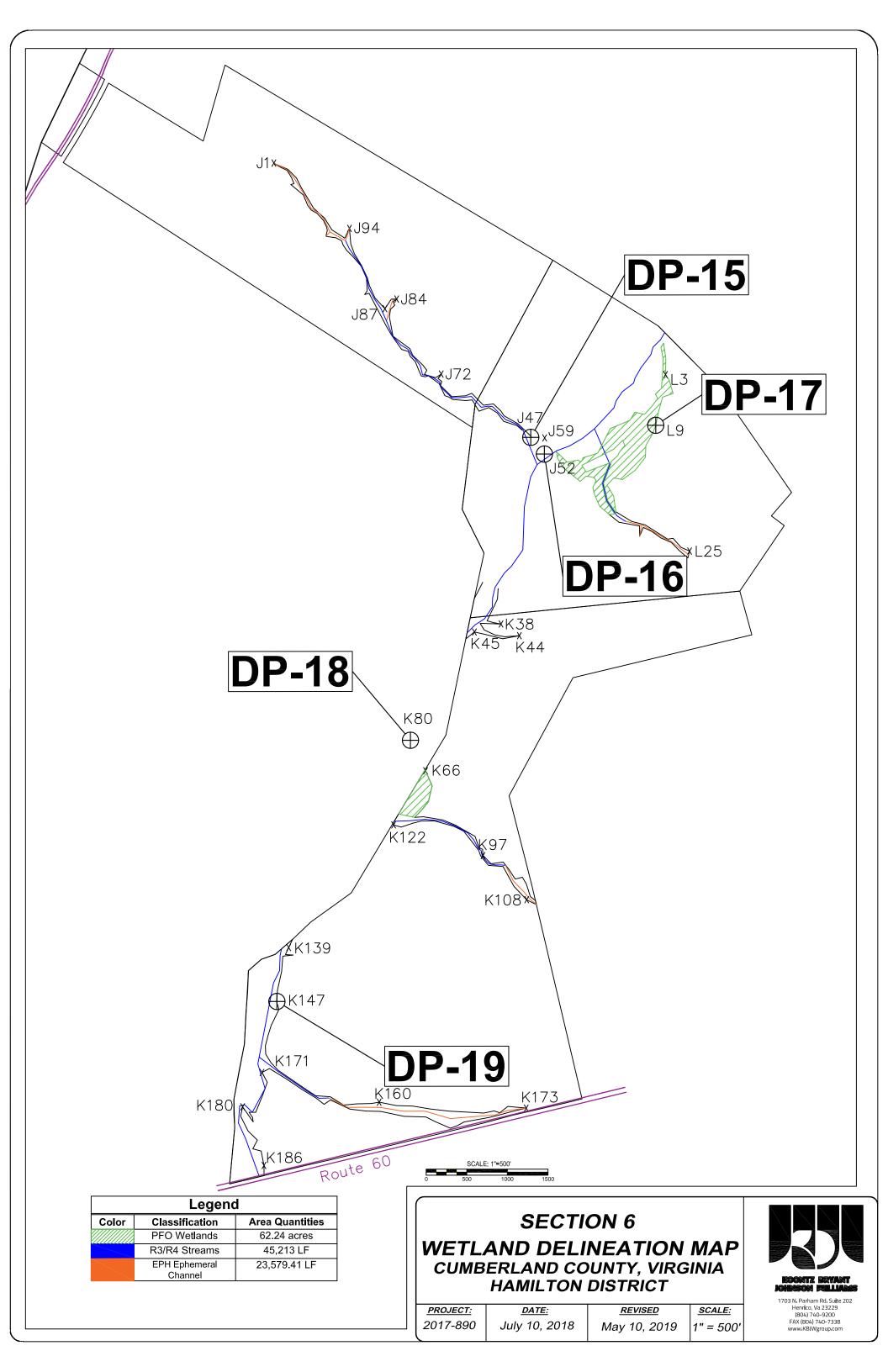












Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD:
B. NAME AND ADDRESS OF PERSON REQUESTING PJD:
C. DISTRICT OFFICE, FILE NAME, AND NUMBER:
D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)
State: County/parish/borough: City:
Center coordinates of site (lat/long in degree decimal format):
Lat.: xx.xxx° Long.: yy.yyy°
Universal Transverse Mercator:
Name of nearest waterbody:
E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY): Office (Desk) Determination. Date:
Field Determination. Date(s):
TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
				·	
···					

- The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that; (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "may be" waters of the U.S. and/or that there "may be" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

	Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:		
	Maps, plans, plots or plat submitted by or on behalf of the PJD requestor: Map:		
	Data sheets prepared/submitted by or on behalf of the PJD requestor. Office concurs with data sheets/delineation report. Office does not concur with data sheets/delineation report. Rationale:		
	Data sheets prepared by the Corps:		
	Corps navigable waters' study:		
	U.S. Geological Survey Hydrologic Atlas: USGS NHD data. USGS 8 and 12 digit HUC maps.		
	U.S. Geological Survey map(s). Cite scale & quad name:		
	Natural Resources Conservation Service Soil Survey. Citation:		
	National wetlands inventory map(s). Cite name:		
	State/local wetland inventory map(s):		
	FEMA/FIRM maps:		
	100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)		
	Photographs: Aerial (Name & Date):		
	or Other (Name & Date):		
	Previous determination(s). File no. and date of response letter:		
	Other information (please specify):		
beer	ORTANT NOTE: The information recorded on this form has not necessarily necessarily the Corps and should not be relied upon for later jurisdictional rminations.		
Regi	ature and date of Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable) ¹		

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

ATTACHMENT PTA-XXIII - PROXIMITY TO GEOLOGIC HAZARDS OR SEISMIC ZONES

In accordance with *Virginia Solid Waste Management Regulations* (*VSWMR*) 9VAC20-81-120 - Siting Requirements, subsection 9VAC20-81-120.B.2, a municipal solid waste landfill may not be sited where on-site or local geological or man-made features or events may result in sudden or non-sudden events and subsequent failure of structural components or containment structures.

With regards to the above citation, *VSWMR* 9VAC20-81-120.C.3.B.1 and 9VAC20-81-120.C.3.B.2) provide siting criteria regarding geologic faults and seismic impact zones:

- (1) Within 200 feet of a fault that has had displacement in Holocene time unless the owner or operator demonstrates to the director that an alternative setback distance of less than 200 feet will prevent damage to the structural integrity of the facility and will be protective of human health and the environment; or
- (2) Within seismic impact zones, unless the owner or operator demonstrates to the director that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

The following discussion addresses the siting criteria for young faults and seismic impact zones.

Ground Displacement by Young Geologic Faults

VSWMR 9VAC20-81-120.C.3.b(1) restricts siting of landfills within 200 feet of a geologic fault that demonstrated movement within the Holocene epoch (i.e., young faults). The Holocene epoch spans from 11.7 thousand years ago to today, and is part of the Quaternary Period. The Quaternary Period is divided into two epochs: the earlier Pleistocene (2.588 million years ago to 11.7 thousand years ago) and the later Holocene (11.7 thousand years to today).

The U.S. Geological Survey (USGS) documented faults or fault-related features in the United States with movement known or suspected to have occurred in the Quaternary (USGS, 2006). This resource presents a conservative assessment of the potential for young faults to be present within 200 feet of the proposed landfill and related containment features, because it increases the criteria for fault identification from the Holocene (11,700 years ago) to the entire Quaternary (2,588,000 years ago).

Table PTA-XXIII-1, below, summarizes the USGS assessment of known or potential Quaternary faults in the region surrounding the proposed Facility (USGS, 2006). **Figure PTA-XXIII-1** illustrates the proposed landfill location and the approximate location of the potential fault or fault-like features identified by USGS (2006).

Table PTA-XXIII-1		
Summary of Known or Inferred Quaternary age Faults or Fault-like Features (USGS, 2006). See Figure PTA-XXIII-1 for Referenced # Feature Location		
	Feature Identity: Central Virginia seismic zone	
	CEUS Class (see note): A	
1	Description : Moderate level of diffuse seismicity. 5.8 M earthquake occurred on August 23, 2011. Hypocenter was in Louisa County, 5 miles SSW of Mineral and 37 miles NW of Richmond. Thought to be of tectonic origin with liquefaction fields caused by moderate to large historical and Holocene earthquakes.	
	Feature Identity: Pembroke faults	
	CEUS Class (see note): B	
2	Description : Small, normal faults with up to 11 m displacement. Non-tectonic origin. Fault trace fillings contain delicate grain-scale textures precluding sudden slip. Likely caused by dissolution of underlying carbonate bedrock.	
	Feature Identity: Linside fault zone	
_	CEUS Class (see note): C	
3	Description : Located on northwest edge of the Giles County Seismic Zone (see earlier discussion). Normal fault zone displacing Devonian folded bedrock. No Quaternary movement of the fault zone is demonstrated.	
	Feature Identity: Everona fault – Mountain Run fault zone	
	CEUS Class (see note): C	
4	Description : Faults appear to have reactivated with Mesozoic extension of the Culpeper Basin. Quaternary age movement has not been demonstrated for the fault zone.	
	Feature Identity: Lebanon Church fault	
5	CEUS Class (see note): C	
	Description : Reverse fault offsets base of gravels overlying Precambrian bedrock. No Quaternary movement of the fault is demonstrated.	

	Feature Identity: Old Hickory faults
	CEUS Class (see note): C
6	Description : Small reverse faults with up to 6 m of throw placing Coastal Plain gravels over Paleozoic metamorphic bedrock. Faulting was coeval with deposition of faulted Coastal Plain sediment of Pliocene age. No Quaternary movement of the fault zone is demonstrated.
	Feature Identity: Stanleytown – Villa Heights faults
7	CEUS Class (see note): C
	Description : Both faults are short (<300 m) with steep dip and <6 m slip. Both faults appear to be related to landslides.

Table PTA-XXIII-1 Notes on CEUS feature class designation (USGS, 2006):

- Class A fault = Geologic evidence demonstrates the existence of a Quaternary fault of tectonic origin, whether the fault is exposed for mapping or inferred from liquefaction or other deformational features.
- Class B fault = Geologic evidence demonstrates the existence of a fault or suggests Quaternary deformation, but either (1) the fault might not extend deeply enough to be a potential source of significant earthquakes, or (2) the currently available geologic evidence is too strong to confidently assign the feature to Class C but not strong enough to assign it to Class A.
- Class C fault = Geologic evidence is insufficient to demonstrate (1) the existence of tectonic fault, or (2) Quaternary slip or deformation associated with the feature.

As illustrated in Figure PTA-XXIII-1, the closest identified young fault or fault-like feature with possible Quaternary movement is associated with the Central Virginia Seismic Zone (Reference #1 in Table PTA-XXIII-1; CEUS Class A). The center of this zone is located approximately 20 miles from the proposed landfill, which does not contravene the siting criteria under 9VAC20-81-120.C.3.b(1).

In conclusion, the proposed landfill is not located within 200 feet of a geologic fault that demonstrated movement within the Holocene epoch.

Seismic Hazards

VSWMR 9VAC20-81-120.C.3.b(1) restricts siting of landfills within a seismic impact zone unless the owner or operator demonstrates that all containment structures are designed to resist the maximum anticipated seismically-induced horizontal ground acceleration in lithified earth

material. Note that the following assessment incorporates potential soil amplification that could increase the horizontal acceleration from deeper lithified earth material. The information presented below to address seismic impact zones is generally consistent with the 1993 (most recently available) Virginia Department of Environmental Quality (VDEQ) Guidance Document LPR-SW-02-1993 for evaluating landfill Part A demonstration requirements.

The USGS updated since 1993 the probabilistic earthquake-induced ground motion model (Petersen, et al.; 2014), which was used to identify seismic impact zones and estimate peak horizontal ground acceleration with a 2,500-year recurrence period. Note that the 1993 Guidance references a 10% probability of occurrence over 250 years, while the 2014 model references 2% probably of occurrence over 50 years, but this is an equivalent recurrence period of 2,500 years.

Summary of Seismic Impact Area

Probabilistic earthquake-induced ground motion was evaluated for the proposed landfill based on work completed by the USGS. The proposed landfill is located within the Central Virginia Seismic Zone, which approximately corresponds to probabilistic ground acceleration exceeding 0.1-g (10% of gravity) shown in **Figure PTA-XXIII-2** (darker blue to yellow shaded area) (taken from USGS, 2014).

Ground Shaking Hazard Levels

Based on the USGS (2014) modeling, peak ground acceleration estimates for the proposed landfill may range up to 0.2-g with a 2% probability of occurring in 50 years (i.e., mean return period of approximately 2,500 years) (Figure PTA-XXIII-2).

The peak horizontal ground acceleration estimate taken from USGS (2014) incorporates potential soil amplification based on sites between class B (rock) and C (dense soil). This site class criteria corresponds to an average shear wave velocity of 760 m/sec in the top 30 meters of soil, which is considered to be representative of conditions underlying the proposed landfill consisting of relatively shallow bedrock and saprolite with overburden.

Landfill Containment Structure Design Considerations

In general, earthquake-induced seismic hazards for the proposed landfill are considered to be moderate to low, based on probabilistic estimates of ground motion discussed above. The proposed landfill design will incorporate a seismic coefficient resulting from potential earthquake-induced peak horizontal ground acceleration as discussed below.

Seismic stability studies prepared for the U.S. Army Corps of Engineers (Hynes-Griffin and Franklin, 1984) demonstrated the efficacy in designing waste disposal facilities for one-half the estimated peak acceleration (i.e., 50% of 0.2-g), which represents more sustained (i.e., potentially damaging) ground motion, rather than the near-instantaneous transient peak acceleration. Therefore, the Part B permit application for the proposed landfill will incorporate a design seismic coefficient of

Attachment PTA-XXIII
Proximity to Geologic Hazards or Seismic Zones
Page 5

0.10-g.

Soil liquefaction is a phenomenon often associated with seismic activity in which saturated, non-cohesive soils temporarily lose their strength and liquefy (i.e., behave like viscous liquid) when subjected to forces such as intense and prolonged ground shaking. Areas susceptible to liquefaction may include soils that are generally sandy or silty and are generally located along rivers, streams, lakes, and shorelines or in areas with shallow groundwater. Soil, overburden and saprolite underlying the proposed landfill containment structures do not demonstrate characteristics that are susceptible to liquefaction, and therefore seismically-induced soil liquefaction should not be considered further in the containment structure design components.

Bibliography-

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